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MARYLAND GEOLOGICAL SURVEY





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MARYLAND GEOLOGICAL SURVEY

MIOCENE PLATES



MARYLAND GEOLOGICAL SURVEY



MIOCENE PLATES

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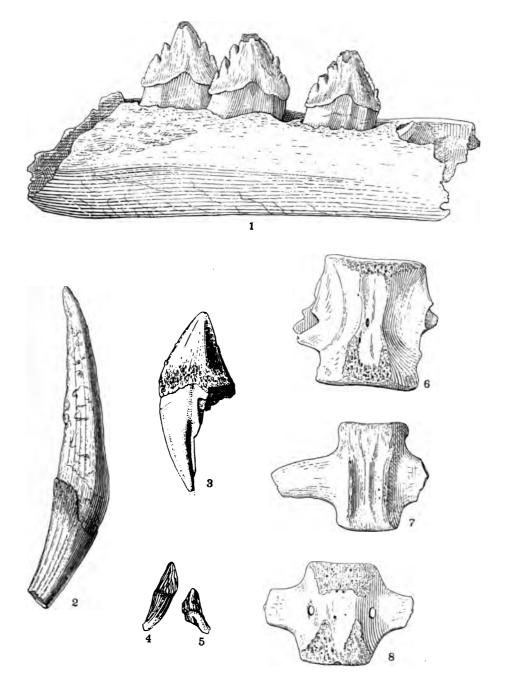
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NOTE

Plates I to IX, illustrating the Geological and Paleontological Relations of the Miocene, are bound with the text volume. The following plates illustrate the Systematic Paleontology of the Miocene Deposits of Maryland.

PLATE X.

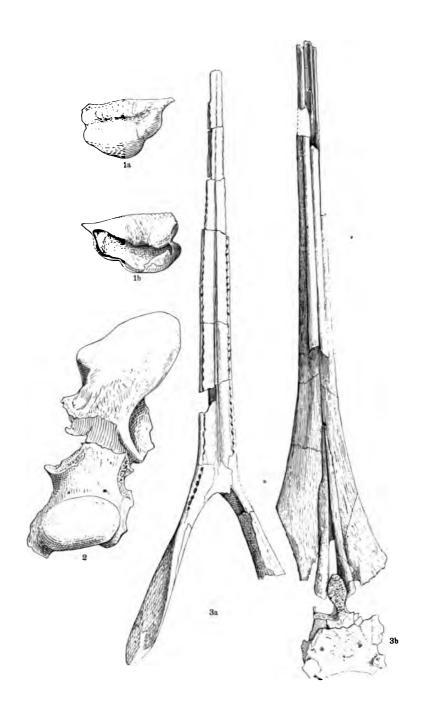
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 Portion of the right side of a jaw containing three teeth. Shiloh, N. J. Acad. Nat. Sci., Phila. × % 	
2, 3. Teeth from "Miocene of Maryland" labelled "Basilosaurus atlanticus." Acad. Nat. Sci., Phila.	
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Fig. 6. Priscodelphinus garbi Cope	9
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Figs. 7, 8. Priscodelphinus buschenbergeri Cope	10
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8. Caudal vertebra, lower view. Charles County near the Patuxent River. Acad. Nat. Sci., Phila. × %	



MAMMALIA.

PLATE XI.

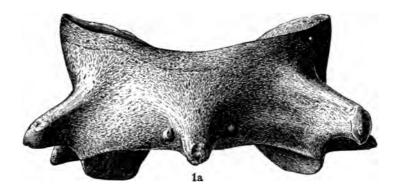
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i e	PAGE
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1a. Inner view of tympanic bone. $\%$ mile north of Governor Run. $\times \frac{1}{2}$	
1b. Outer view of the same specimen. $\times \frac{1}{2}$	
2. Posterior view of left occipital region. Same locality and collection. $\times \frac{1}{2}$	
3a. Upper view of lower jaw. Same locality and collection. $\times \frac{1}{4}$	
3b. Upper view of upper jaw and anterior part of the head of the same individual with the occiput removed. Same locality and collection. × ½	



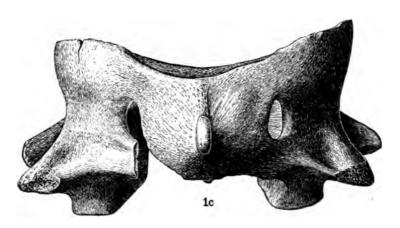
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	PAG
Figs. 1a-1c. Priscodelphinus grandaevus Leidy	. 1
1a. Specimen from ¼ mile south of Chesapeake Beach. Maryland	l
Geological Survey.	
1b. Another view of same specimen.	
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	PAGE
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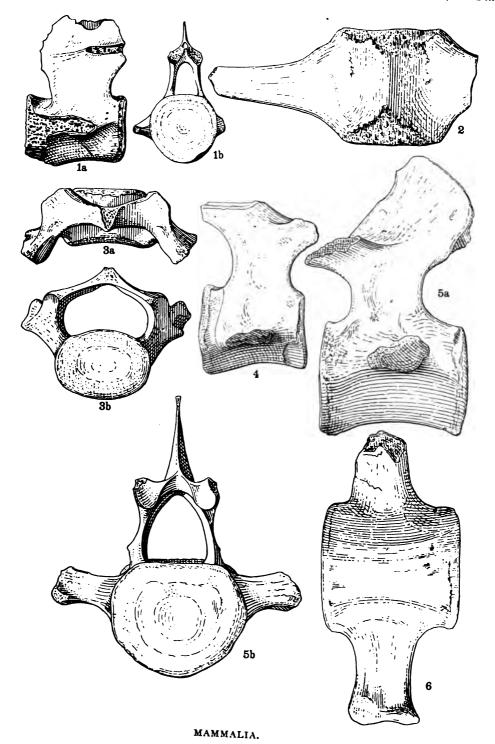
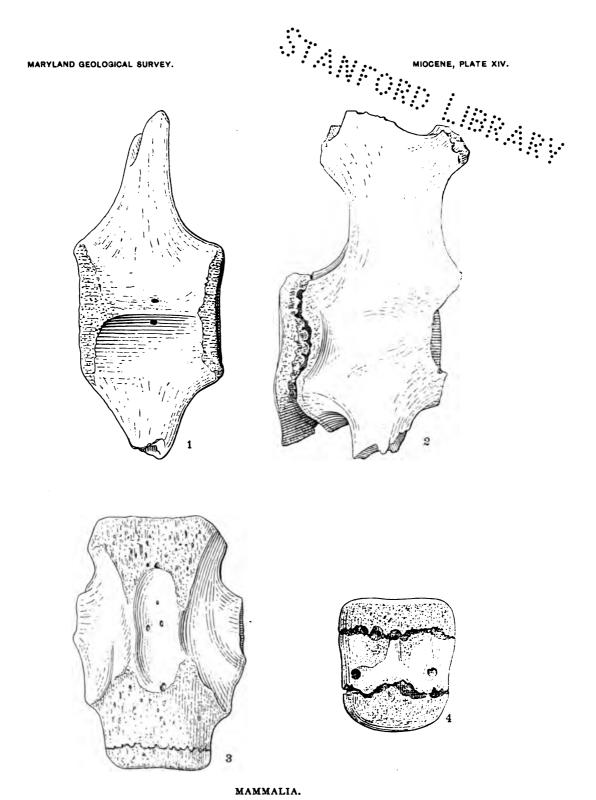


PLATE XIV.

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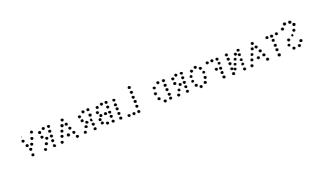
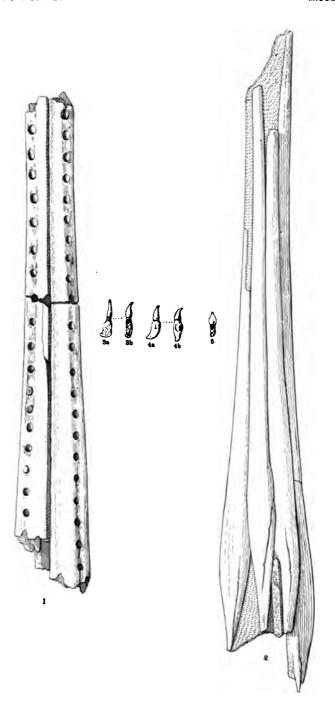


PLATE XV.

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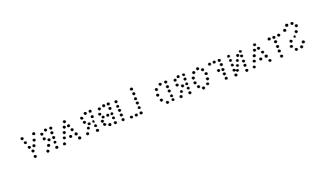
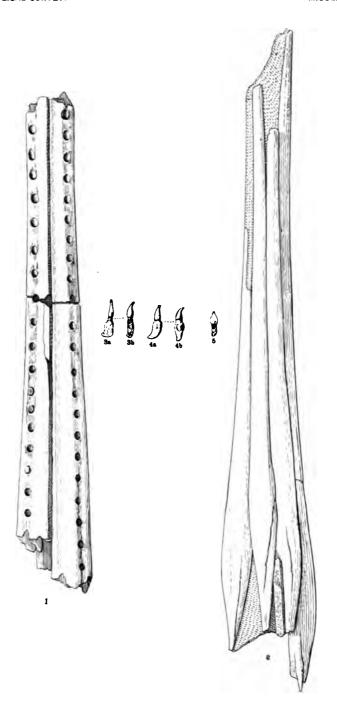


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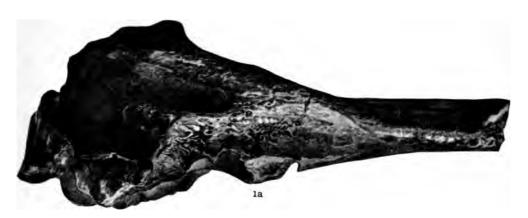
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Figs. 1-5. Rhabdosteus latiradix Cope	24
1. Lower view of rostrum. Charles County near the Patuxent River. Acad. Nat. Sci., Phila. $\times \frac{1}{2}$	
2. Upper view of another rostrum. Same locality and collection. $\times \frac{1}{3}$	
3a. Tooth from the anterior portion of the rostrum. $\times \frac{1}{3}$	
3b. Another view of the same tooth. $\times \frac{1}{2}$	
4a. Another tooth. Same locality and collection. $\times \frac{1}{3}$	
4b. Another view of the same tooth. $\times \frac{1}{3}$	
5. Another tooth. Same locality and collection. $\times \frac{1}{3}$	

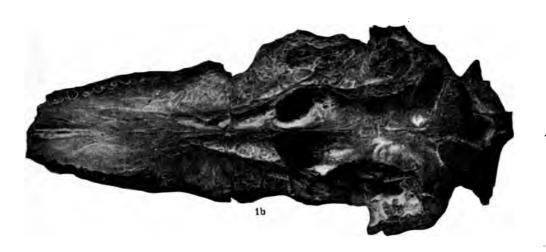


MAMMALIA.

PLATE XVI.

Figs. 1a-1c. Lophocetus calvertensis	(Harlan)
1a. Lateral view of skull. $\times \frac{1}{3}$	·
1b. Lower view of skull. $\times \frac{1}{4}$	
1c. Upper view of skull. $\times \frac{1}{4}$	
(after Harlan).	



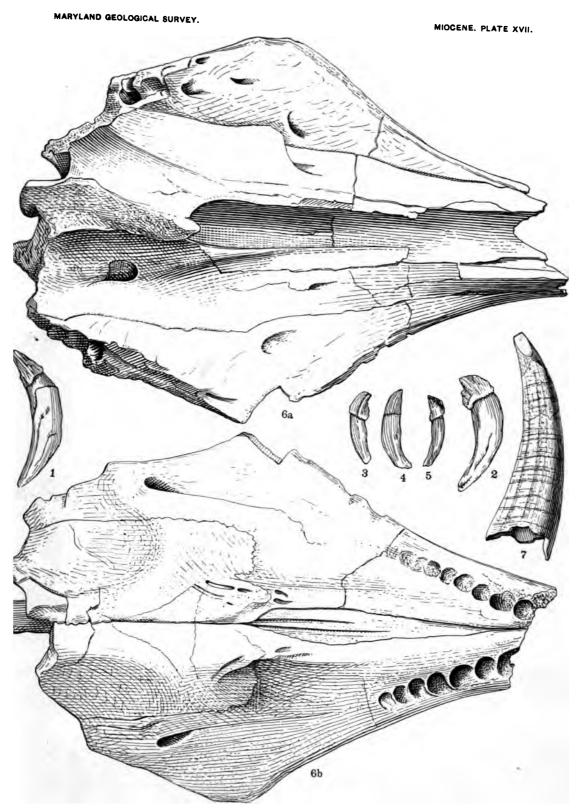




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PLATE XVII.

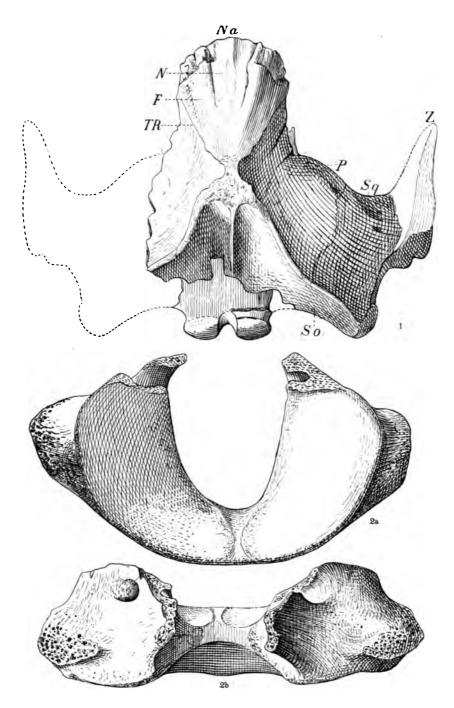
1	PAGE
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 Anterior tooth. Charles County near the Patuxent River. Acad. Nat. Sci., Phila. × % 	
2. Anterior tooth. Same locality and collection. $\times \%$	
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6b. Lower view of the same skull. $\times \frac{1}{6}$	
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MAMMALIA.

PLATE XVIII.

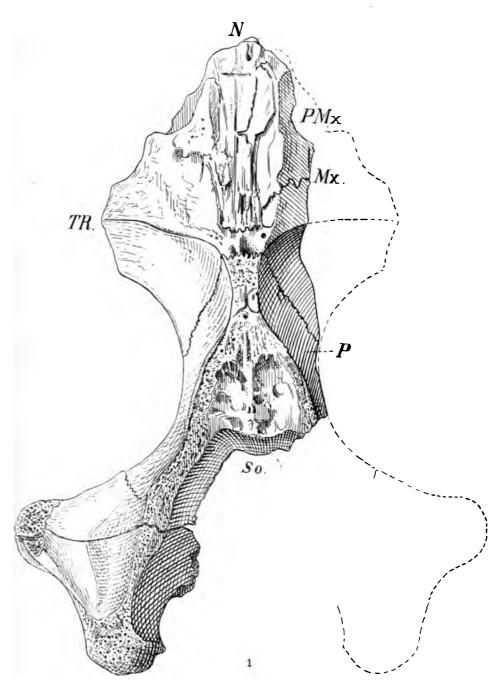
Figs. 1-2b. Metopocetus durinasus Cope	PAGE 36
 Upper view of skull. Near the mouth of the Potomac River. Museum of the Woman's College of Baltimore. × 1/2 	
So., Supraoccipital bone; $Sq.$, Squamosal; $Z.$, Zyzmatic; $P.$, Parietal; $F.$, Frontal; $N.$, Nasal; $Na.$, External nares; $T.R.$, Temporal Ridge.	
2a. Anterior view of atlas vertebra. Same locality and collection. $\times \frac{1}{2}$	
2b. Upper view of the same specimen. $\times \frac{1}{2}$	



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PLATE XIX.

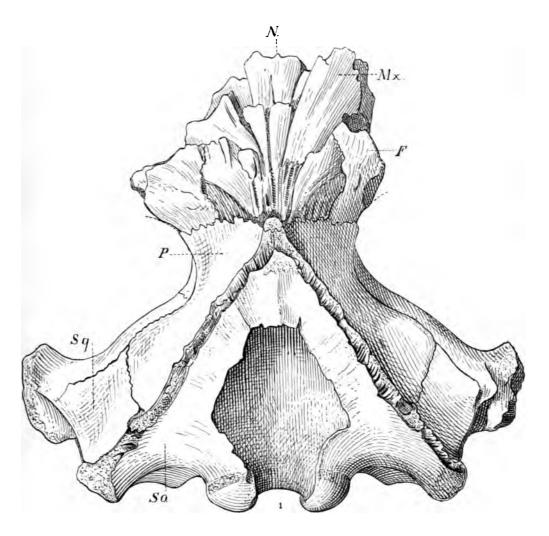
			PAGE
Fig.	1.	CEPHALOTROPIS CORONATUS COPE	39
	1.	Upper view of skull. Johns Hopkins University. × 1/3	
		So., Supraoccipital bone; P., Parietal; N., Nasal; Mx., Maxillary;	
		Pmx., Premaxillary; T.R., Temporal Ridge.	



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PLATE XX.

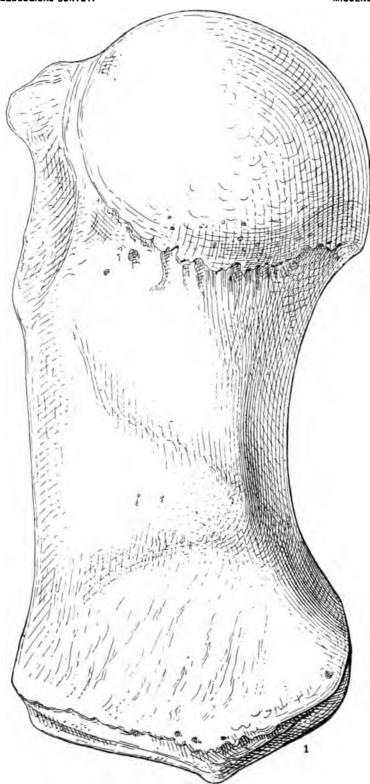
Fig. 1. CETEOTHERIUM MEGALOPHYSUM Cope	PAGE 41
1. Upper view of skull. Cove Point. Johns Hopkins University. $\times \frac{1}{4}$	
So., Supraoccipital bone; Sq., Squamosal; P., Parietal; F., Frontal; N., Nasal: Mx., Maxillary.	



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PLATE XXI.

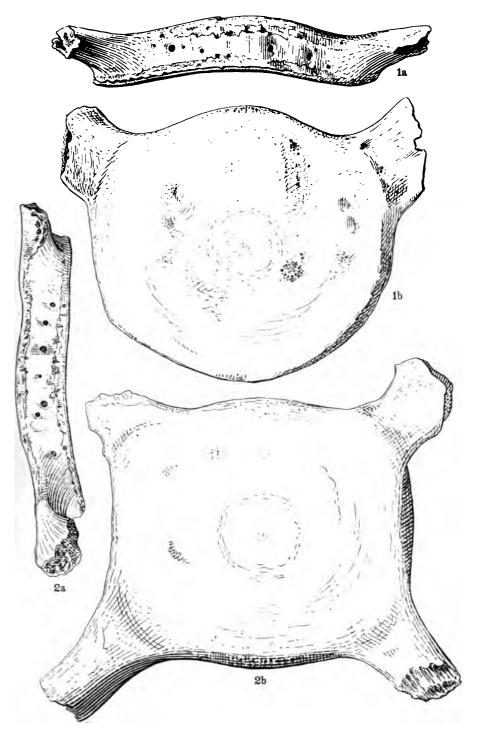
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Fig. 1. Cetotherium cephalum Cope	44
1. Humerus of right side. Shore of Chesapeake Bay. Johns Hop-	
kins University.	



MAMMALIA.

PLATE XXII.

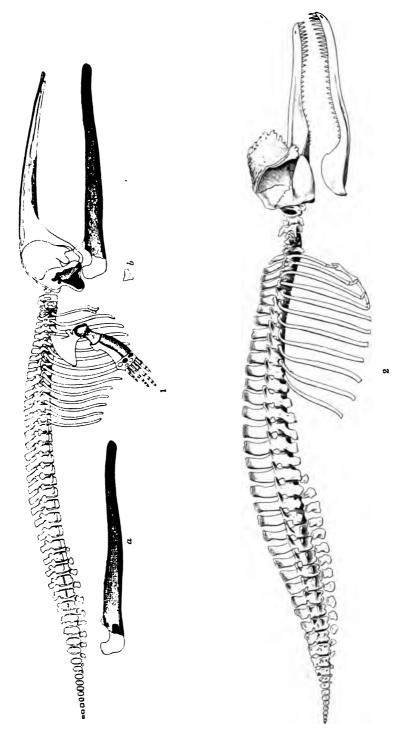
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Figs. 1a-2b. Cetotherium cephalum Cope	44
1a. Vertebra. Charles County near the Patuxent River. Acad. Nat.	
Sci., Phila. $\times \frac{4}{3}$	
1b. Another view of the same vertebra. $\times \%$	
2a. Another vertebra. Same locality and collection. × 3/2	
2b. Another view of the same vertebra. × %	



MAMMALIA.

PLATE XXIII.

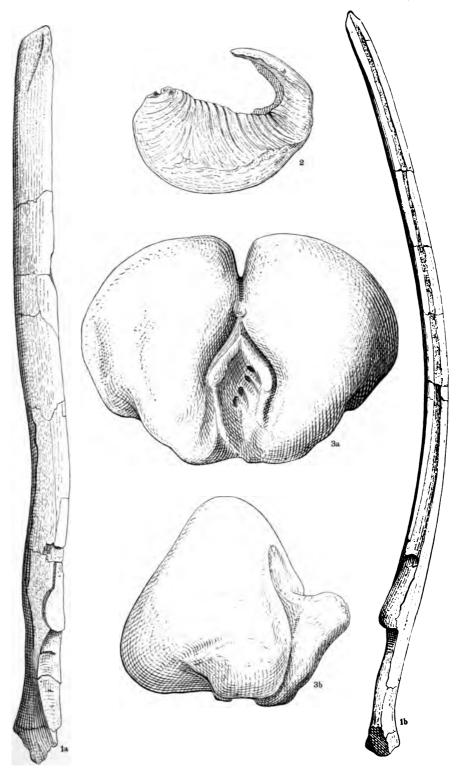
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Figs. 1, 2. Cetotherium cephalum Cope	44
1. Restoration, one-fiftieth natural size. The shaded portions are	
the actual specimen of one individual. Charles County near	
the Patuxent River, now in the Academy of Natural Sciences of	
Philadelphia. (After Cope, Amer. Nat., Vol. XXIV, Pl. XXII.)	
•	
Fig. 2. Skeleton of Plalabusia, minus the fore limbs	44



MAMMALIA.

PLATE XXIV.

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1a. Outer view of lower jaw. Miocene of Maryland or Virginia. Johns Hopkins University. $\times \frac{1}{16}$	
1b. Upper view of the same specimen.	
Fig. 2. Balaenoptera sursiplana Cope	54
2. Tympanic bone. Miocene of Maryland or Virginia. Johns Hopkins University. $\times \frac{1}{2}$	
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3b. View of the same specimen from the side. $\times \frac{1}{4}$	



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PLATE XXV.

	PAGE
Lettering: E. G., External gingival canal; I. G., Internal gingival canal; G. G., Gingival groove; D. C., Dental canal.	
Fig. 1. Cetotherium parvum Trouessart	
Fig. 2. TRETULIAS BUCCATUS Cope	
Fig. 3. Siphonocetus expansus Cope	
Fig. 4. Siphonocetus clarkeanus Cope	
Fig. 5. Siphonocetus priscus Leidy	
Fig. 6. ULIAS MORATUS Cope	
7. Section of left mandibular ramus. After Cope, Proc. Amer. Philos. Soc., Vol. XXXIV, Pl. VI, Fig. 7. × ½	
Fig. 8. Cetotherium cephalum Cope	
9. Section of mandibular ramus from Virginia. After Cope, Proc. Amer. Philos. Soc., Vol. XXXV, Pl. XII, Fig. 5. × 1/2	
Fig. 10. CETOTHERIUM LEPTOCENTRUM Cope	
Fig. 11. Cetotherium davidsonii Cope	
Fig. 12. Mesocetus siphunculus Cope	
Fig. 13. CETOTHERIUM CEPHALUM Cope	ſ

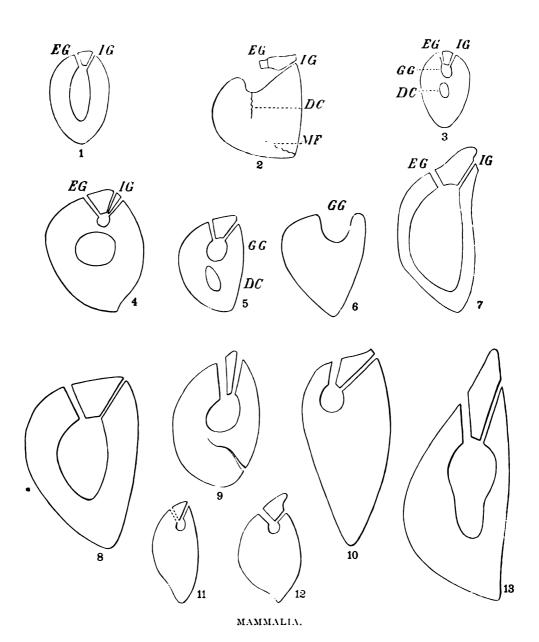
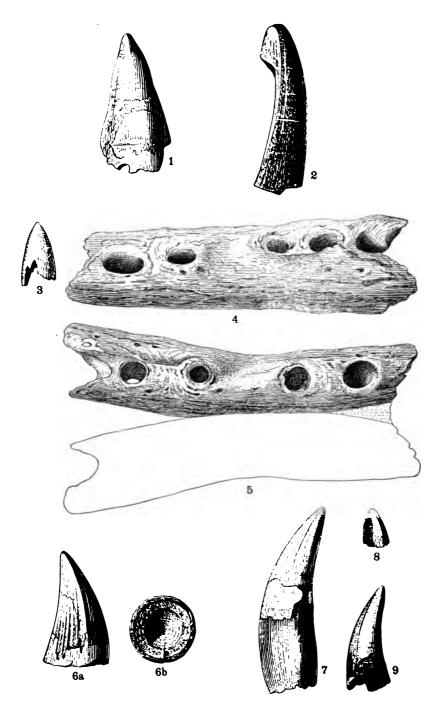


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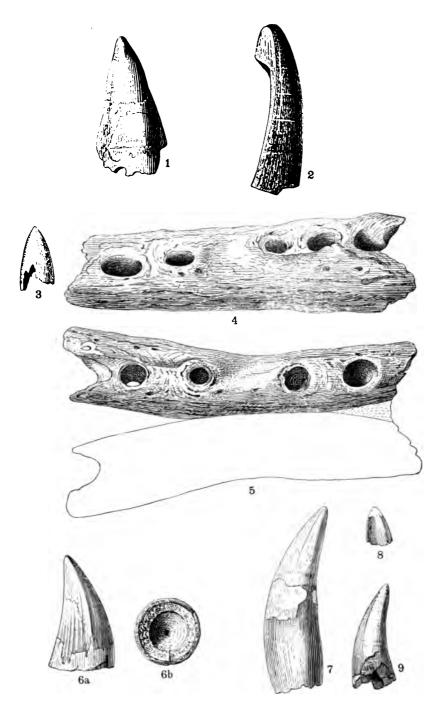
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Fig. 1. Trichechus giganteus (?) (De Kay)	56
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2. Coracoid. Calvert Cliffs. American Museum of Natural History. $\times \%$	
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 Distal portion of right humerus. Miocene of Maryland. Acad. Nat. Sci., Phila. 	
4. Distal portion of right ulna. Same locality and collection.	
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5 Provings portion of seepule Plum Point × 24	



REPTILIA.

PLATE XXVII.

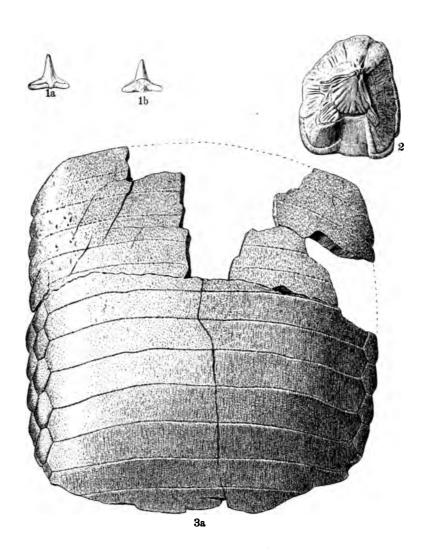
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1. Tooth. Charles County near the Patuxent River. Acad. Nat. Sci., Phila.	
2. Tooth. Same locality and collection.	
Figs. 3-5. Thecachampsa (?) sicaria Cope	66
3. Crown of a tooth. (After Cope.) $\times \frac{2}{3}$	
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5. Another view of the same. (After Cope.) $\times \%$	
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6a. Lateral view of tooth. Charles County near the Patuxent River.	
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mouth of the river in Westmoreland County, Virginia." Acad.	
Nat. Sci., Phila. × %	
8. Another tooth from the same locality and collection. $\times \%$	
9. Another tooth from the same locality and collection. $\times \%$	

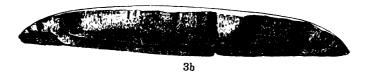


REPTILIA.

PLATE XXVIII.

PLATE XXVIII.	
Figs. 1a, 1b. Squatina occidentalis n. sp	71
1a. Outer face of tooth (type specimen) showing downward prolongation of the enamel below the base of crown. Plum Point. $\times 4/3$	••
1b. Inner face of the same specimen.	
Fig. 2. Raja (?) Dux Cope	72
Figs. 3a, 3b. Myliobatis gigas Cope	73

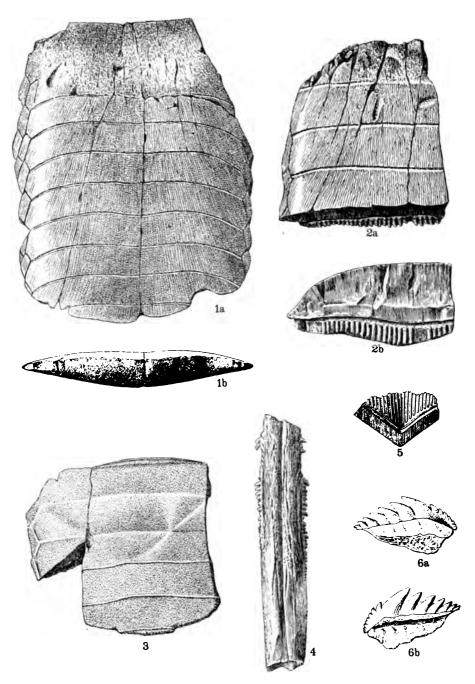




PISCES.

PLATE XXIX.

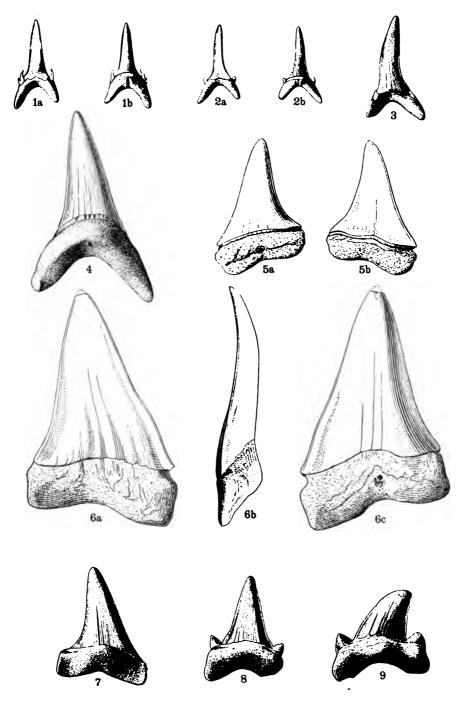
1	PAGE
Figs. 1a, 1b. Myliobatis gigas Cope	73
1a. Oral surface of lower dental pavement, somewhat worn, and showing line of longitudinal striae or fissures of the gano- dentine radiating backwards and outwards. Charles County near the Patuxent River. Type of the so-called "M. vicomi-	
canus." Acad. Nat. Sci., Phila.	
1b. Transverse view of the same specimen at its posterior end (across the bottom of Fig. 1a).	
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Fig. 5. Aëtobat's abcuatus Agassiz	76
Figs. 6a, 6b. Notidanus primigenius Agassiz	77



PISCES.

PLATE XXX.

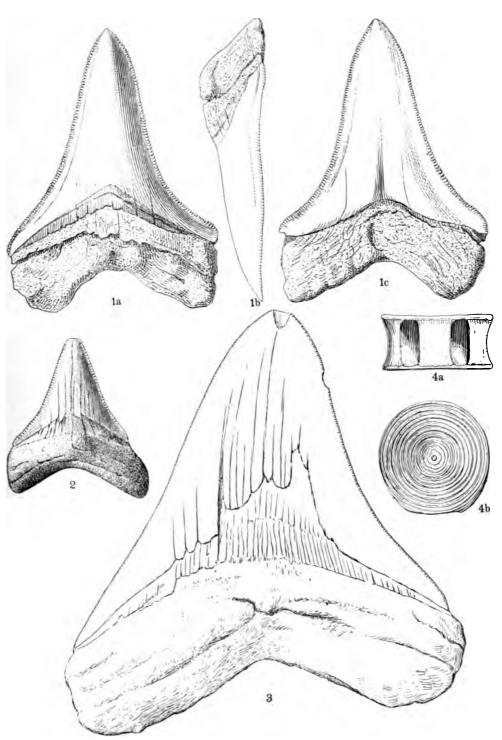
PLATE XXX.	
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1b. Inner face of the same specimen. $\times 4/3$	
Figs. 2a, 2b, 3. Odontaspis elegans (Agassiz)	79
2a. Outer face of a small tooth. Plum Point. $\times 4/3$ 2b. Inner face of the same specimen. $\times 4/3$	
3. Outer face of a somewhat worn tooth, the lateral denticles broken away. Plum Point.	
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4. Inner face of a moderate-sized tooth. Charles County near the Patuxent River. Acad. Nat. Sci., Phila.	
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5a. Inner face of a medium-sized and somewhat worn specimen. Flag Pond.	
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9. Inner face of a small-sized lateral tooth with oblique crown.	
Charles County near the Patuxent River. Acad. Nat. Sci.,	
Phila.	



PISCES.

PLATE XXXI.

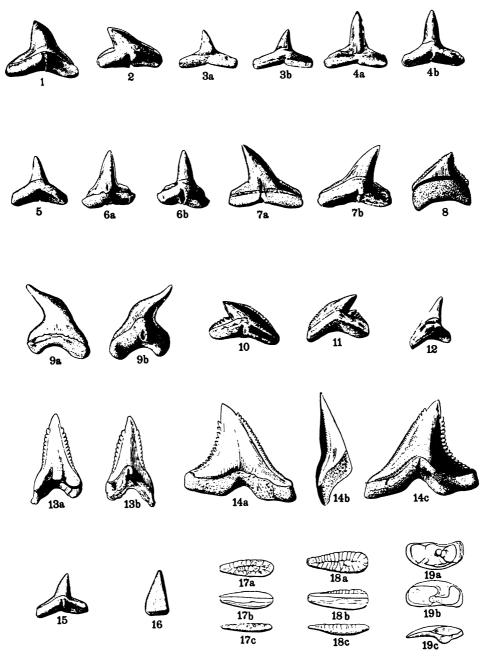
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PLATE XXXII.

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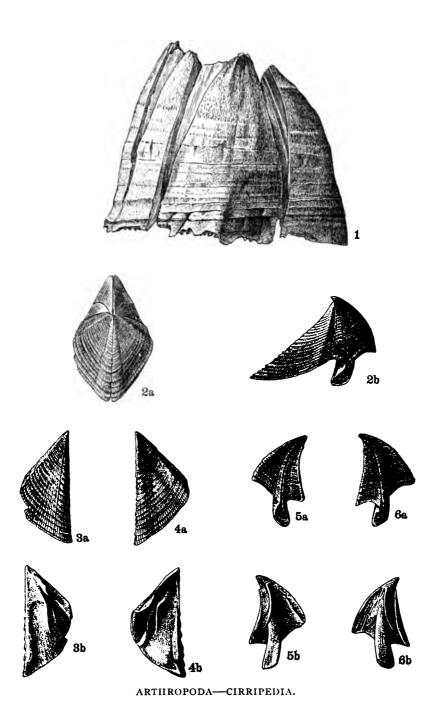
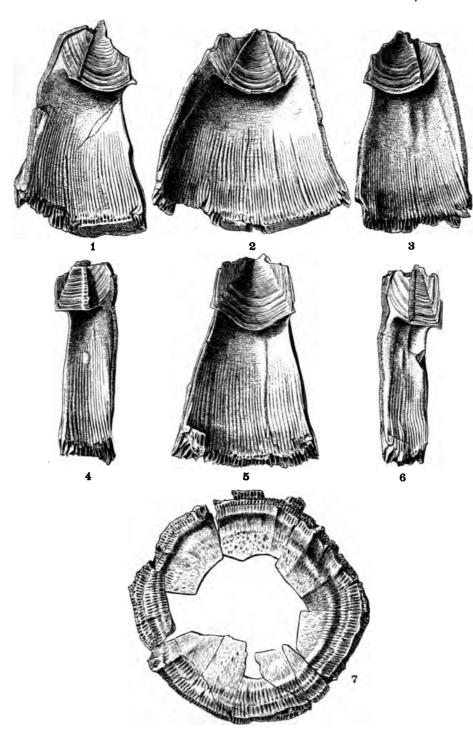


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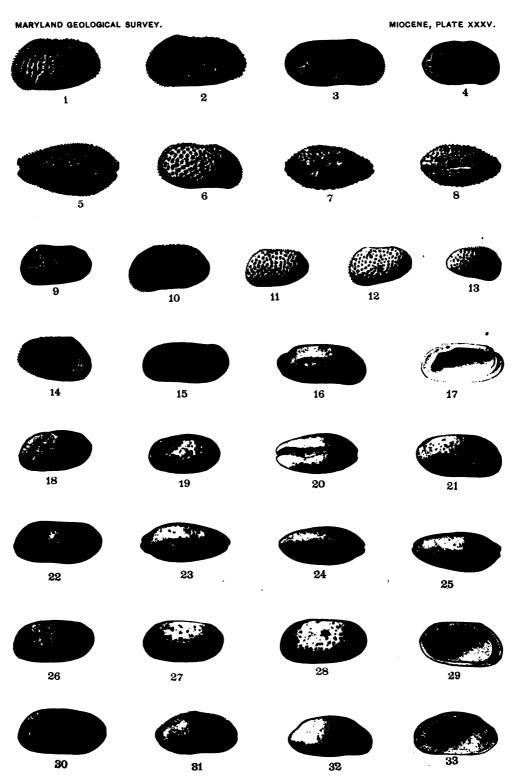


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The figures on this plate are all magnified 20 diameters and the specimens are all from the Calvert formation at Plum Point, Md.

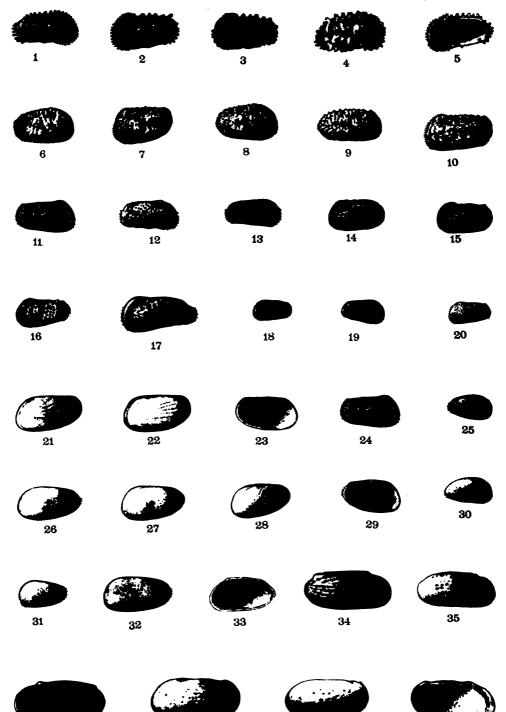


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The figures on this plate are all magnified 20 diameters and the specimens are all from the Calvert formation at Plum Point, Md.



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Excepting Figs. 2 and 7, all the figures on this plate are magnified 20 diameters. The specimens are all from the Calvert formation at Plum Point, Md.

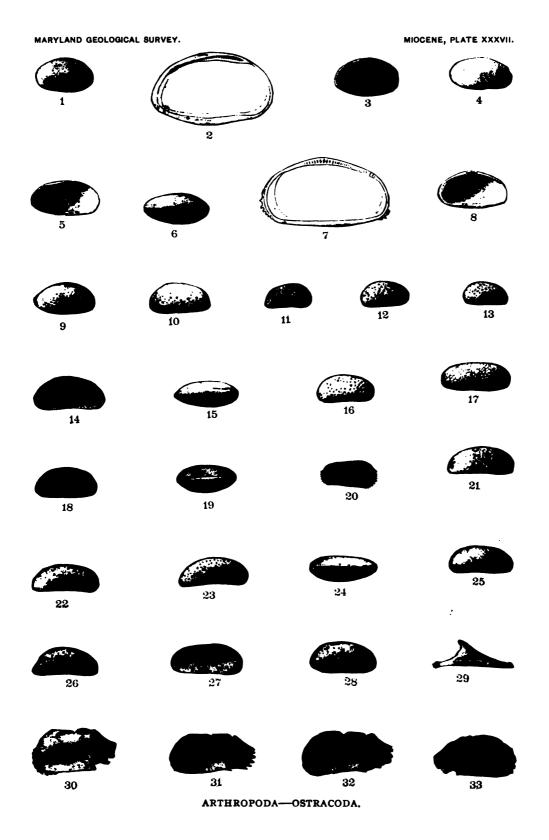
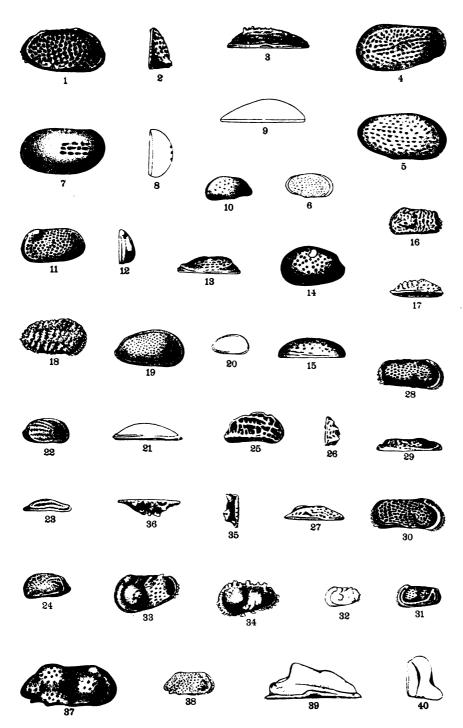


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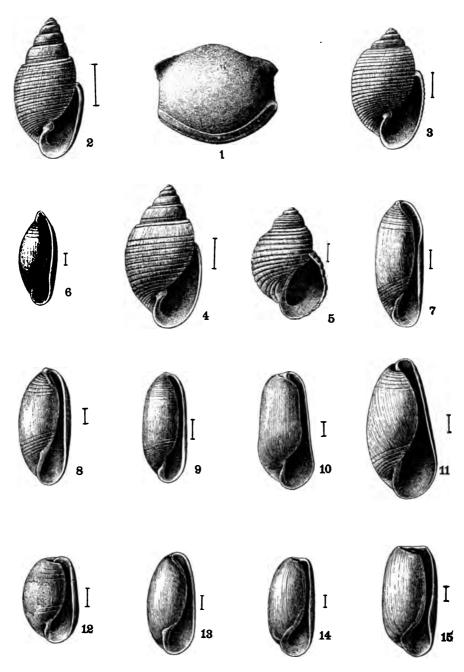
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ARTHROPODA—OSTRACODA.

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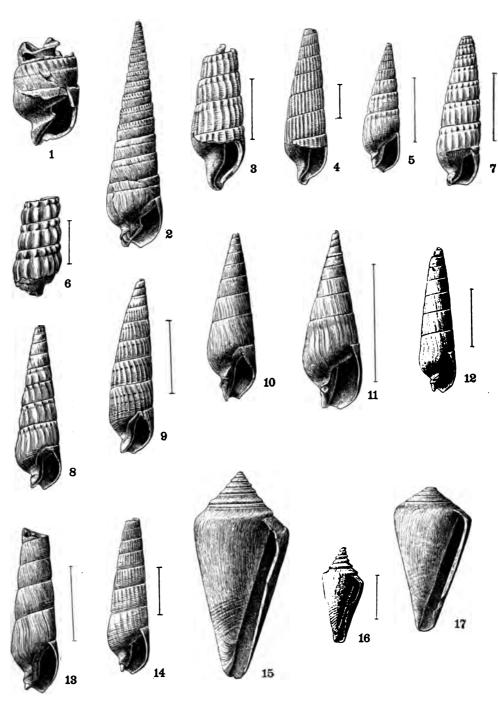
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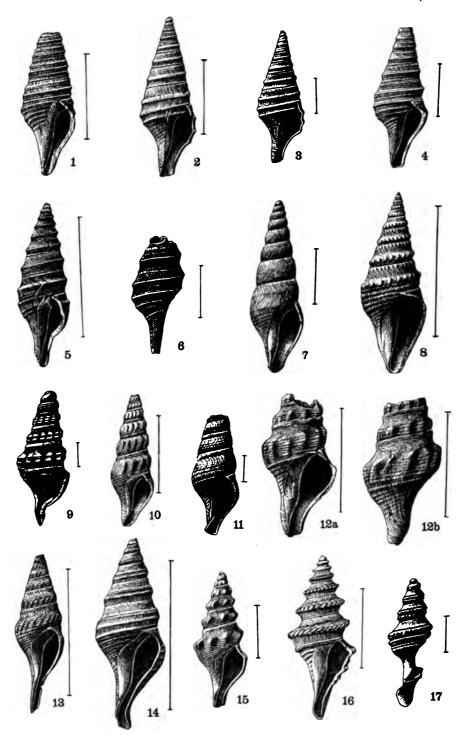
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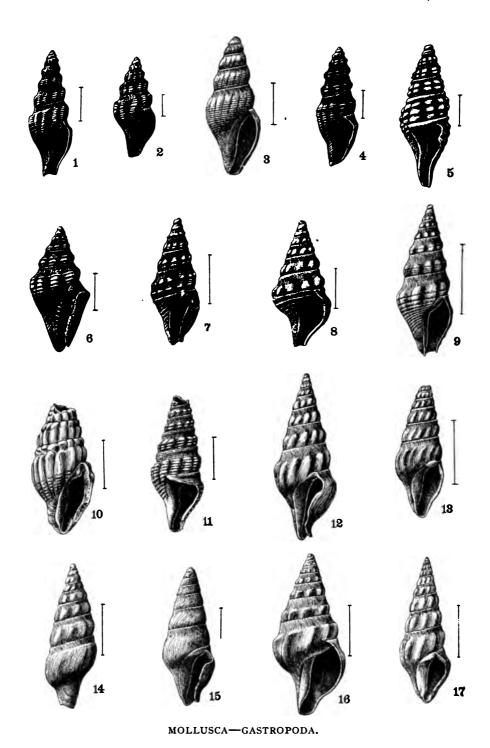
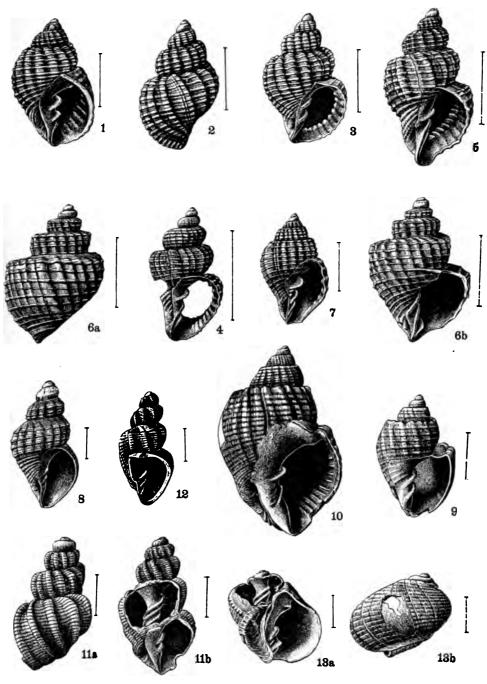


PLATE XLIII.

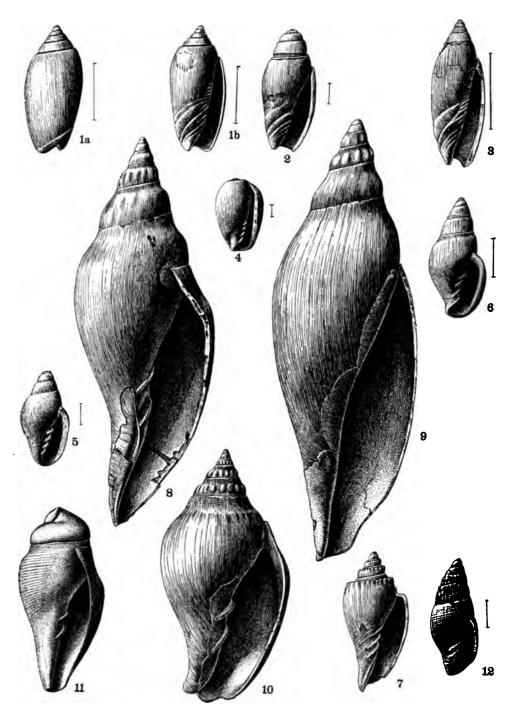
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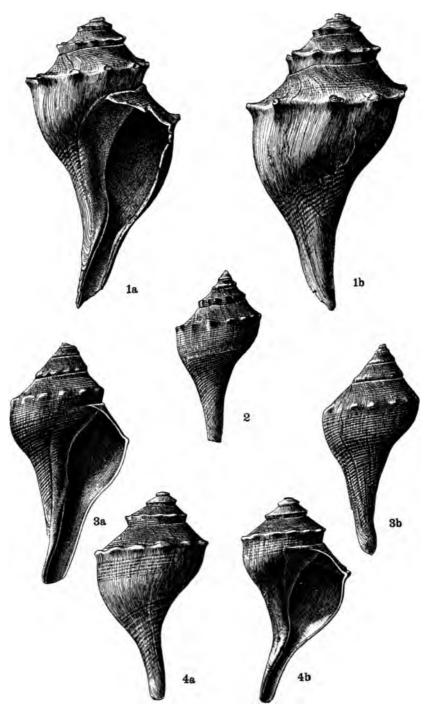
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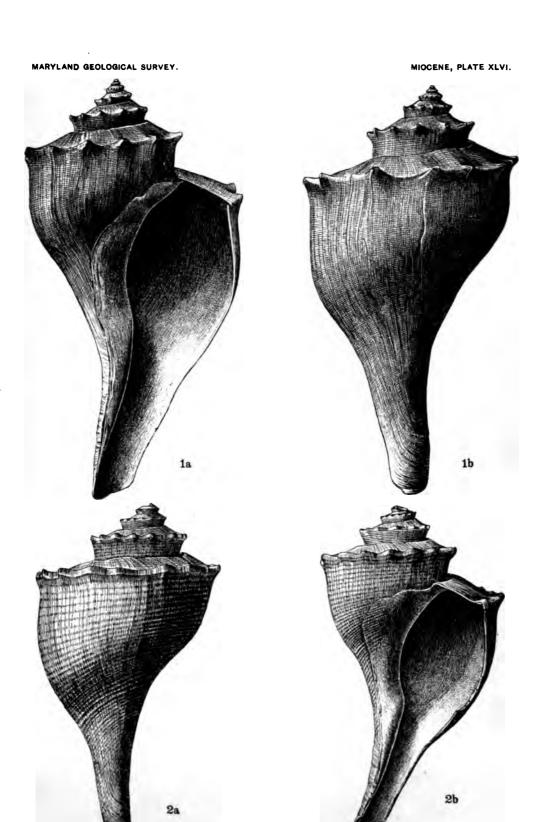
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MOLLUSCA-GASTROPODA.

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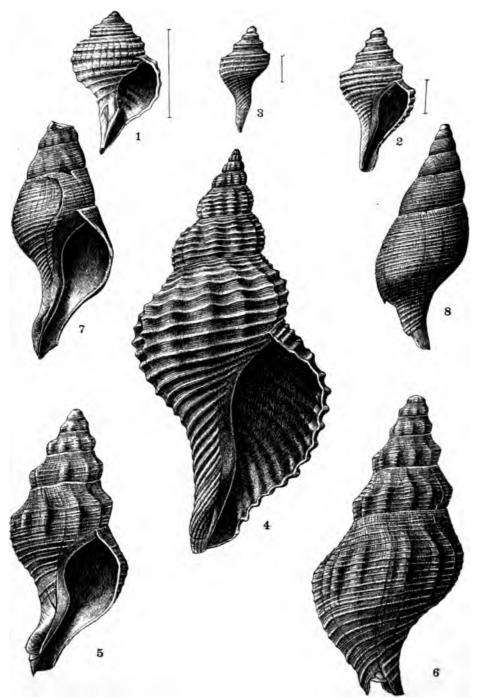
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MOLLUSCA—GASTROPODA.

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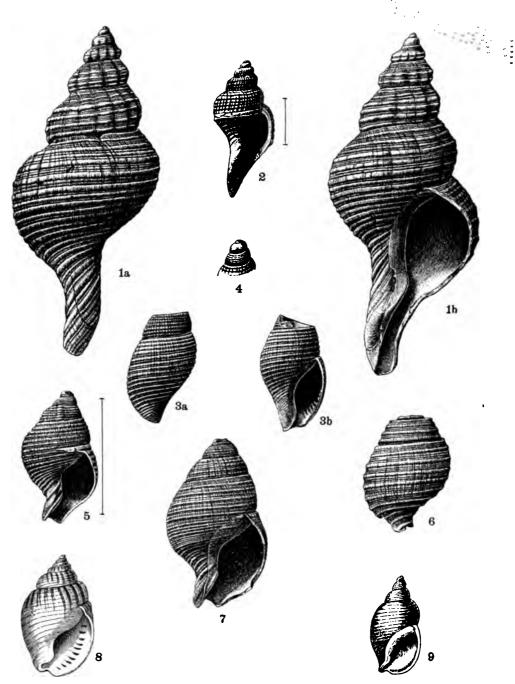
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MOLLUSCA—GASTROPODA.

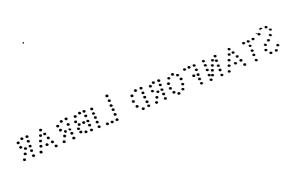


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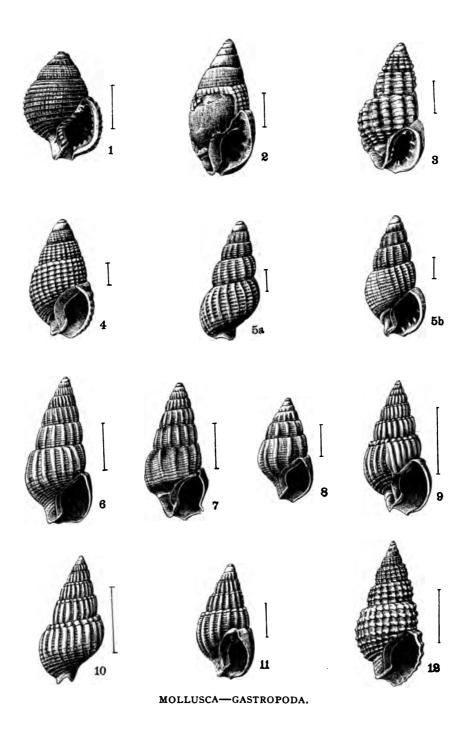
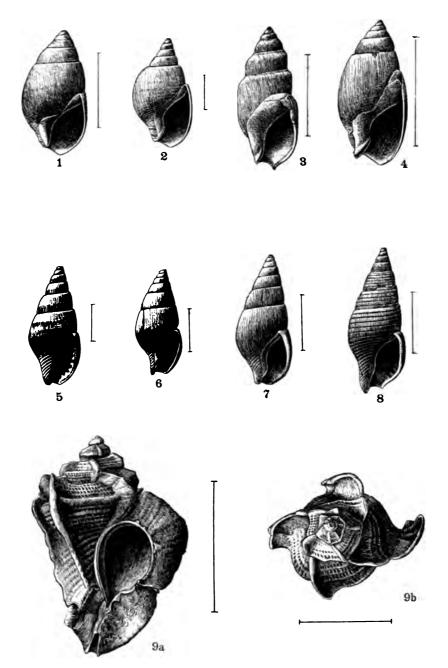


PLATE L.

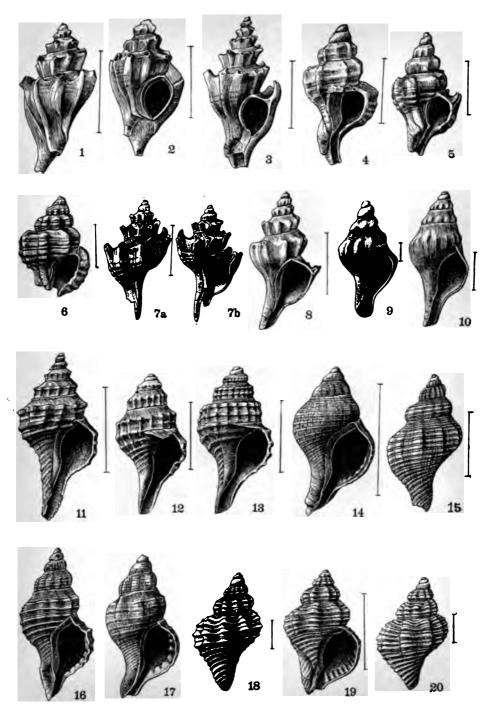
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MOLLUSCA-GASTROPODA.

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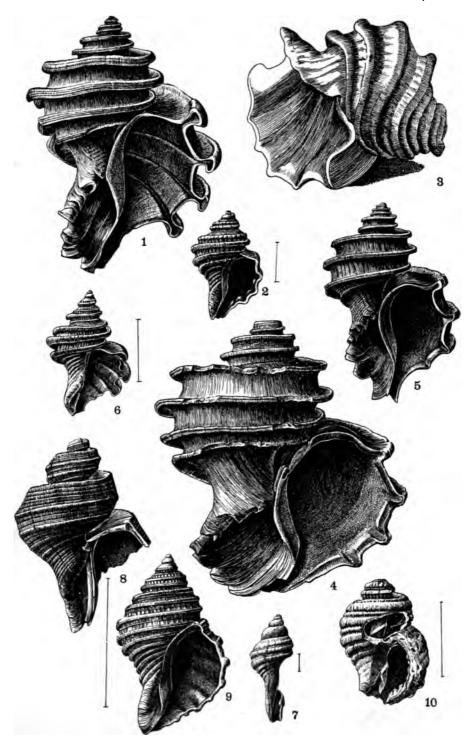
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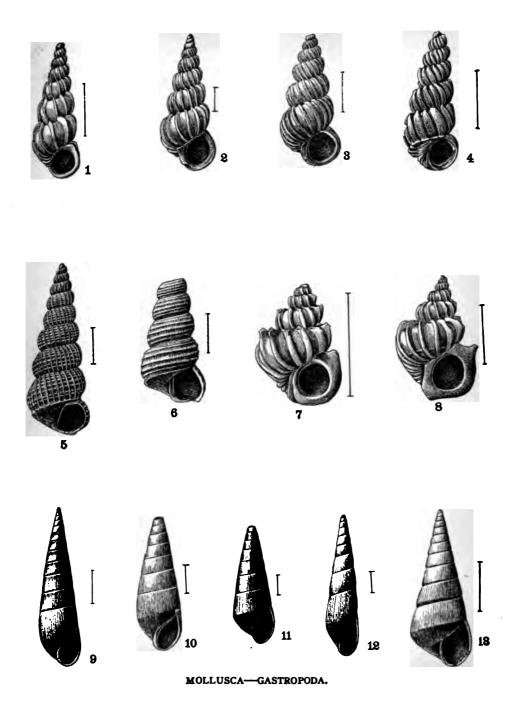
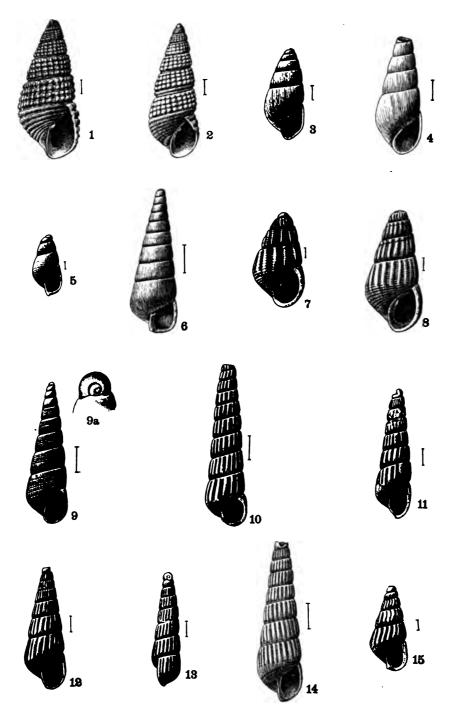


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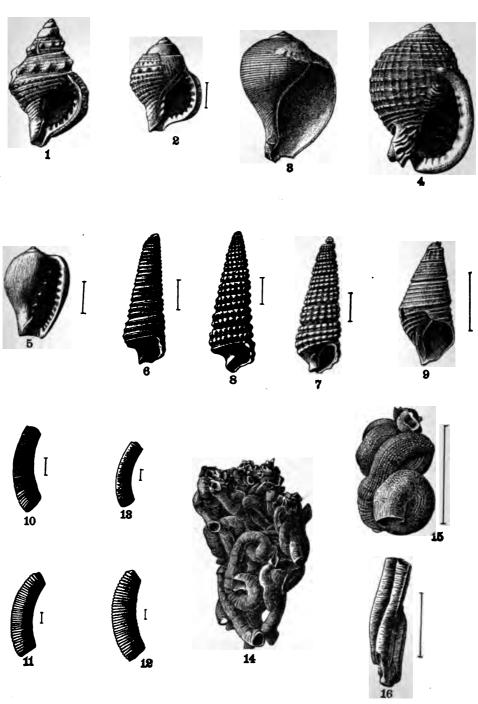
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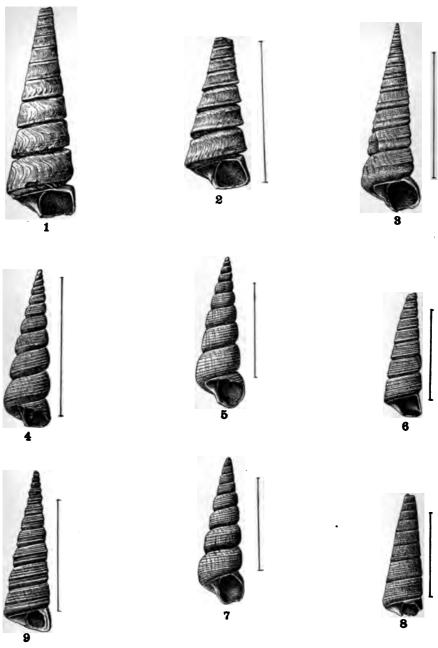
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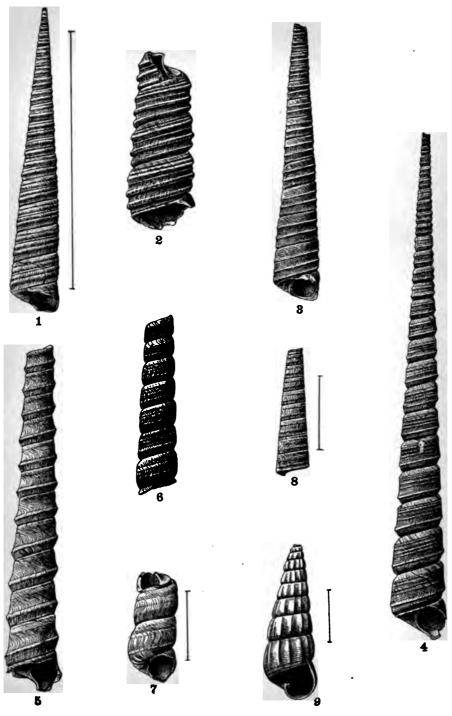
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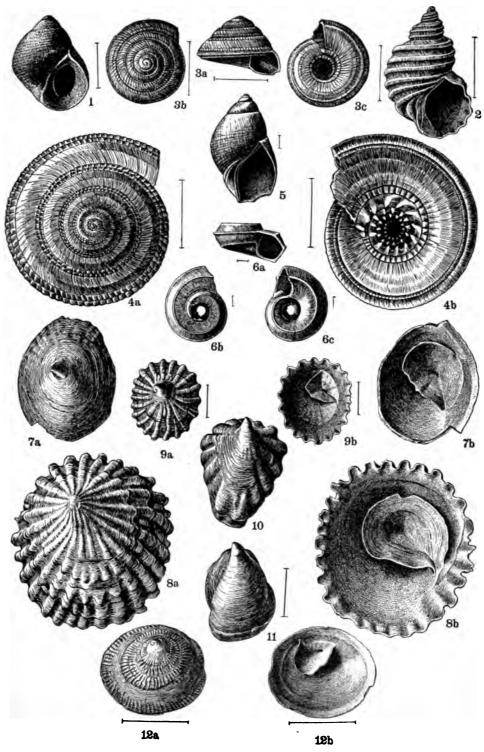
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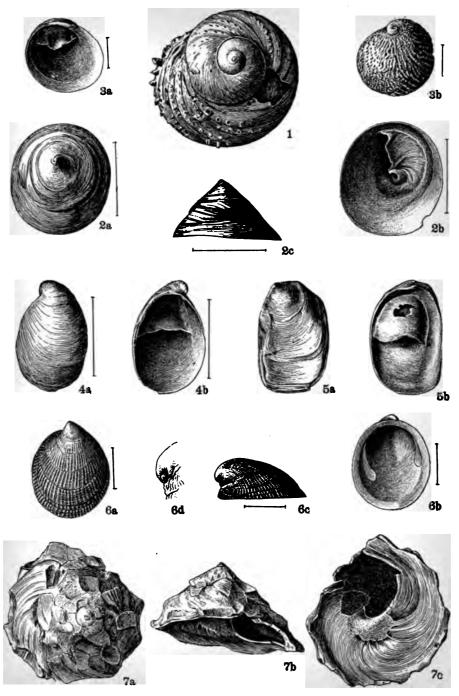
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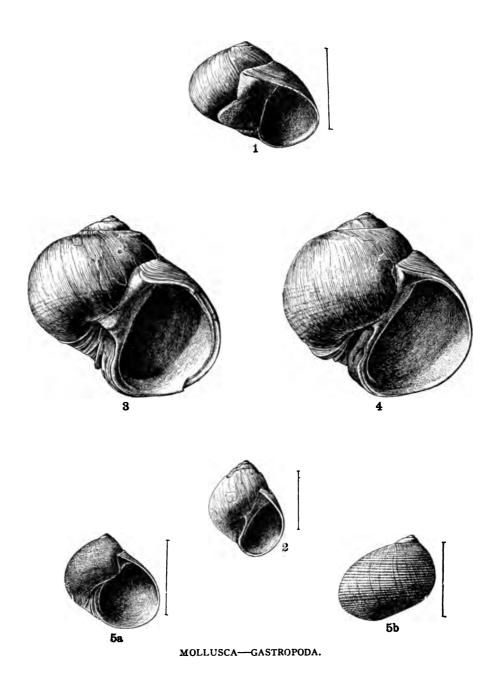
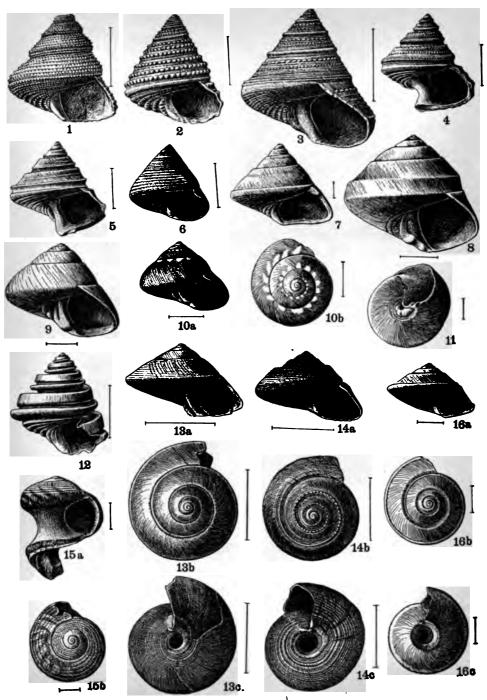


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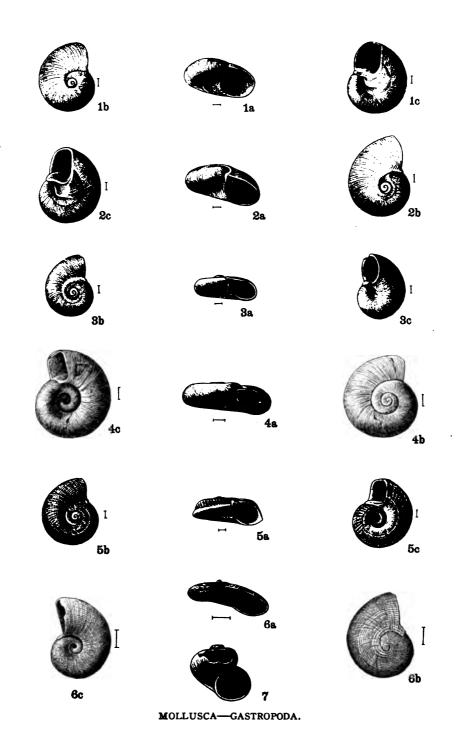


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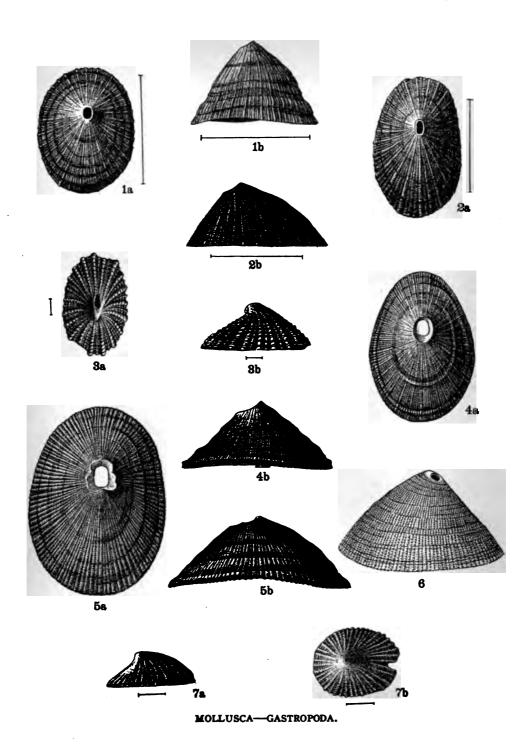
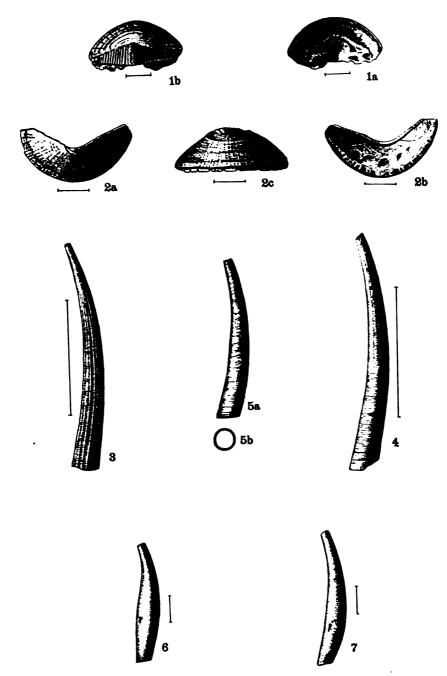


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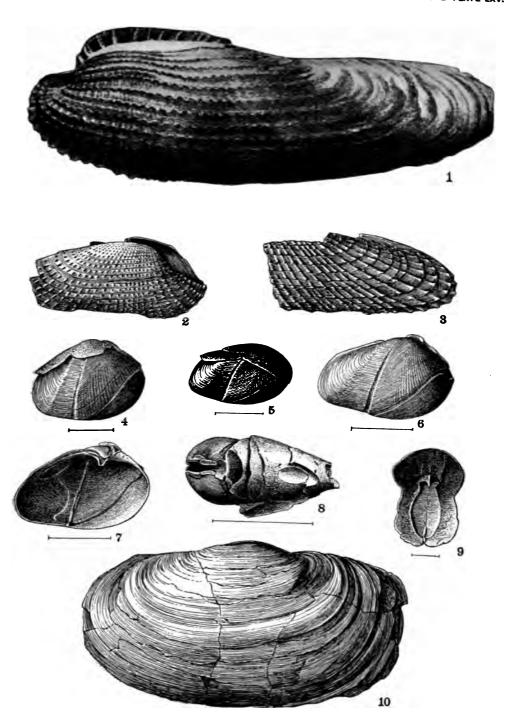
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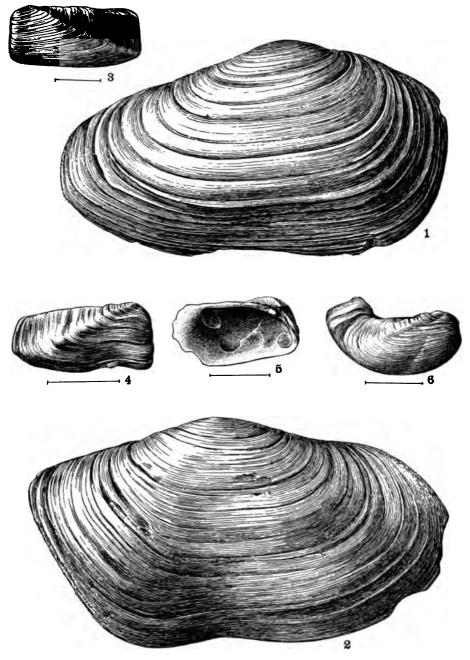
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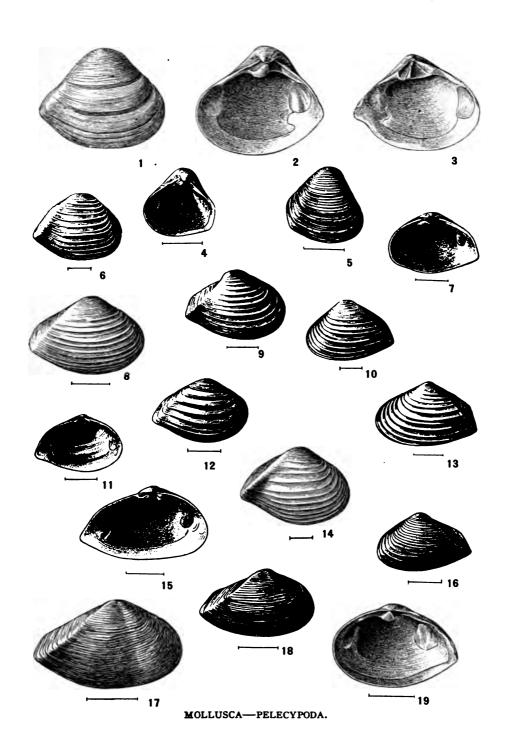
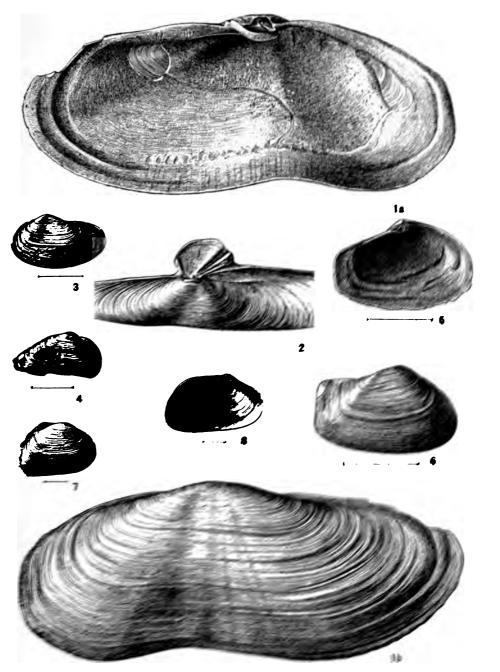


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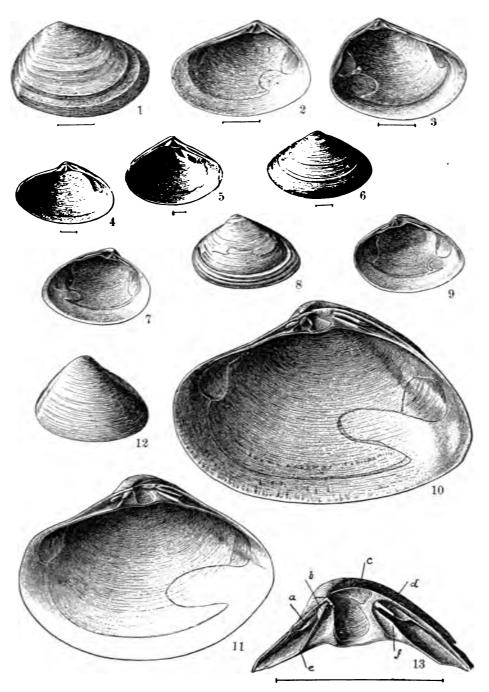


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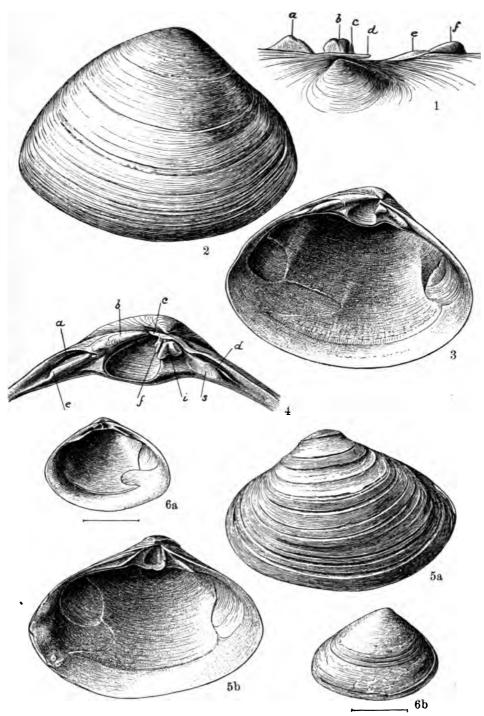


MOLLUSCA—PELECYPODA.

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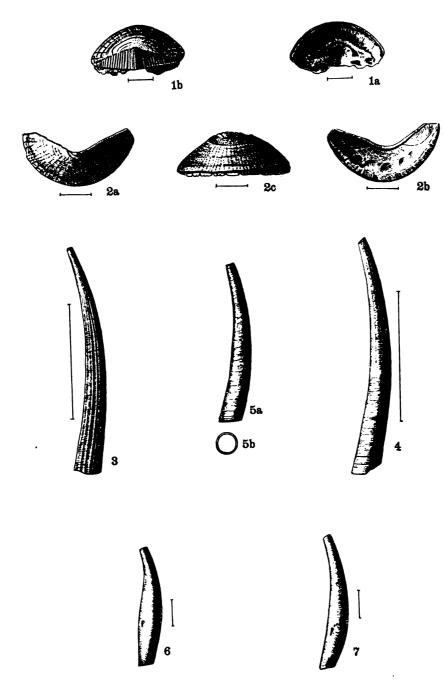
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MOLLUSCA—PELECYPODA.

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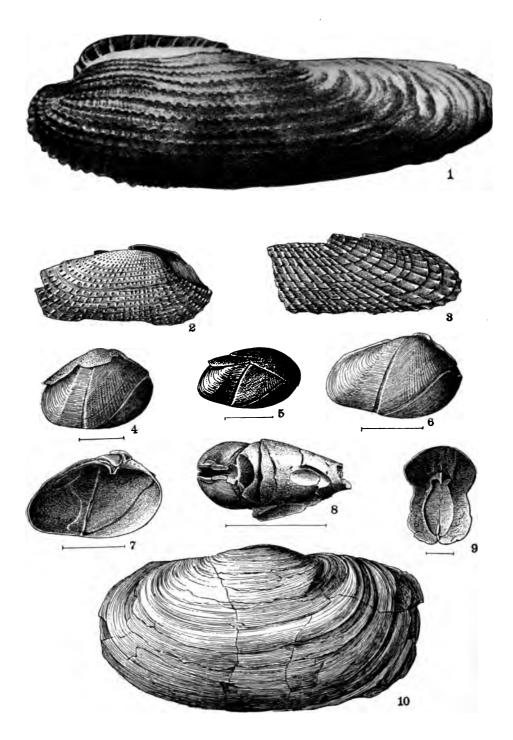
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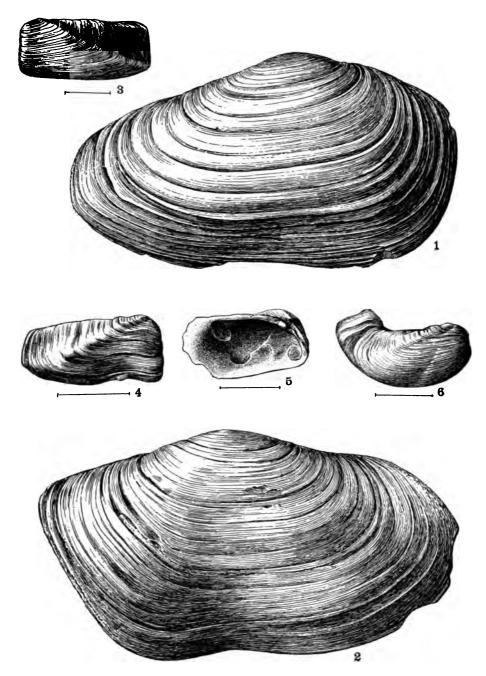
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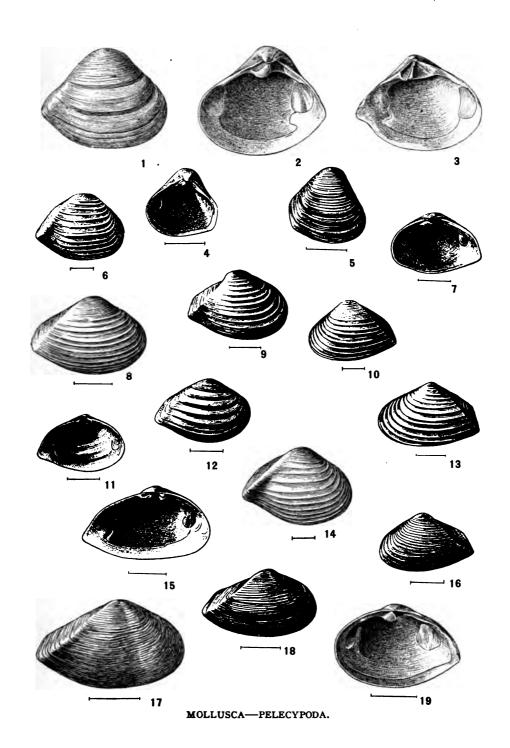
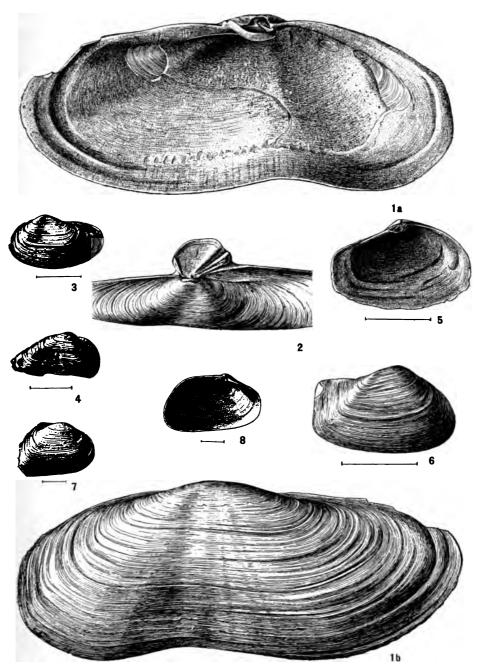


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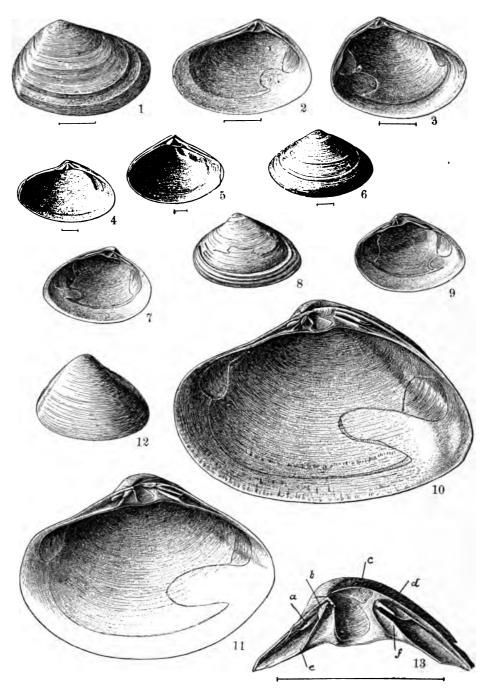
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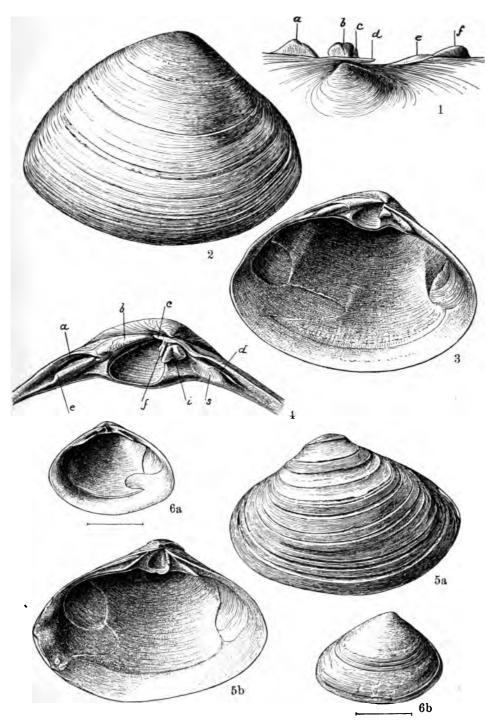
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MOLLUSCA—PELECYPODA.

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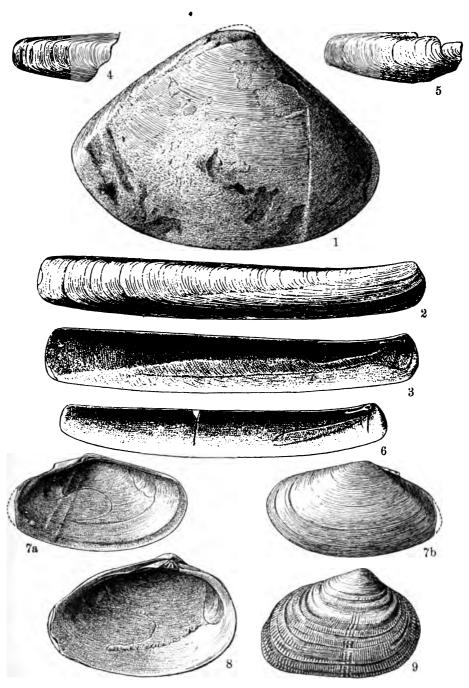
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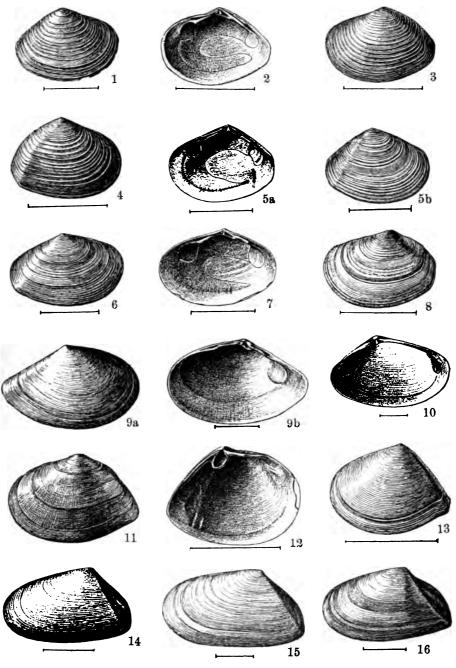
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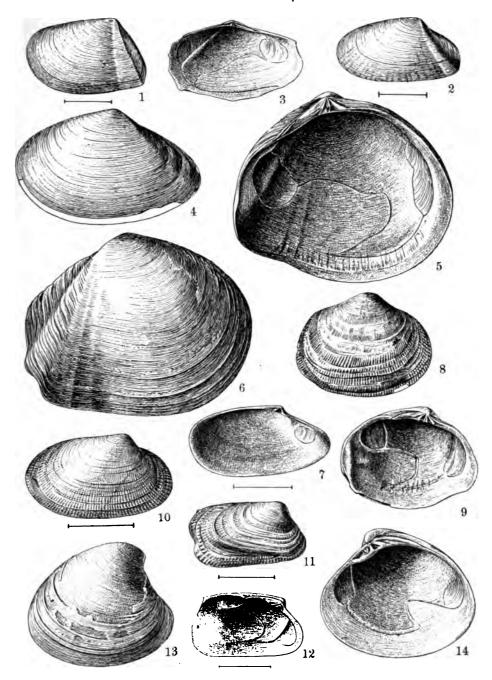
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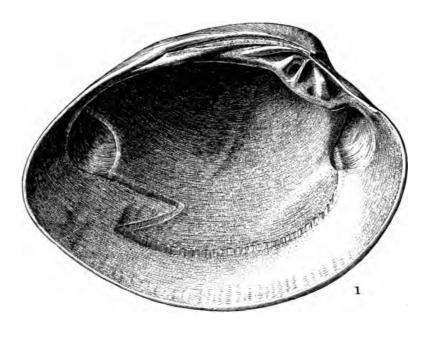
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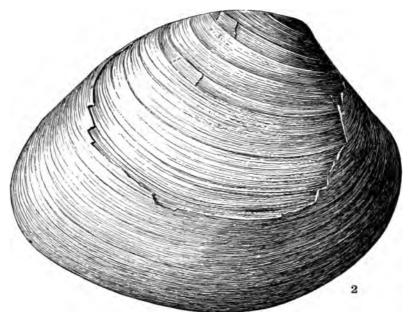


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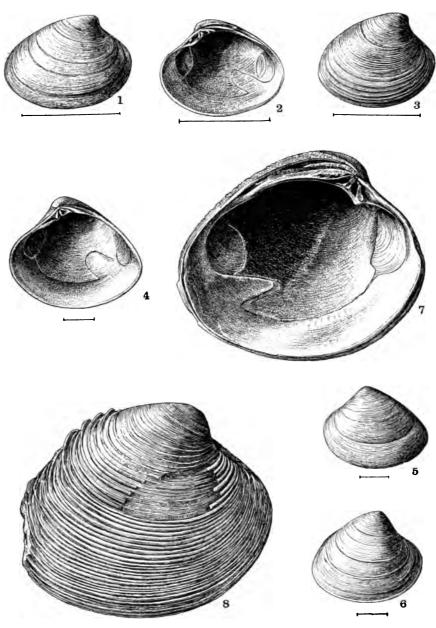




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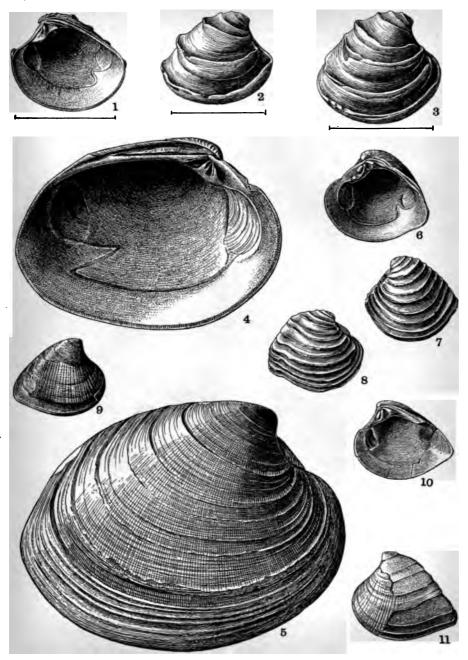
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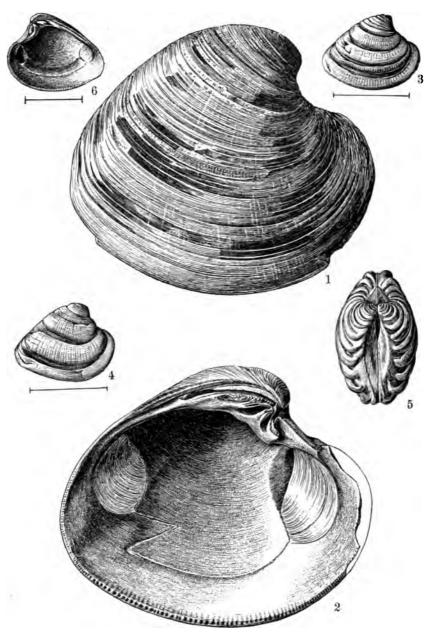
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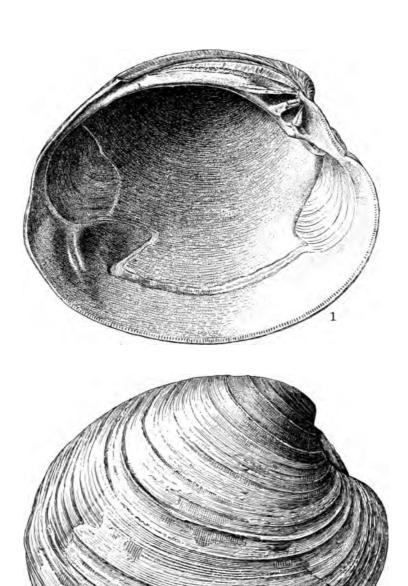
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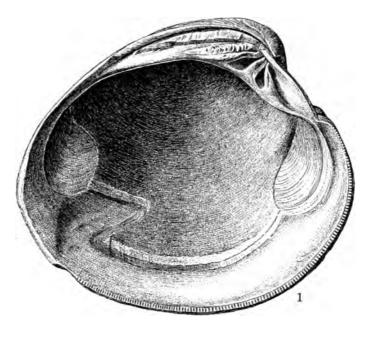
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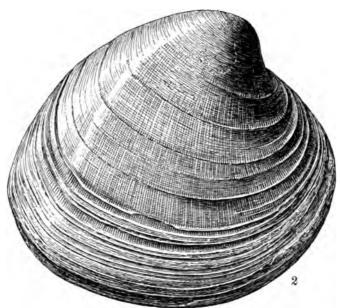
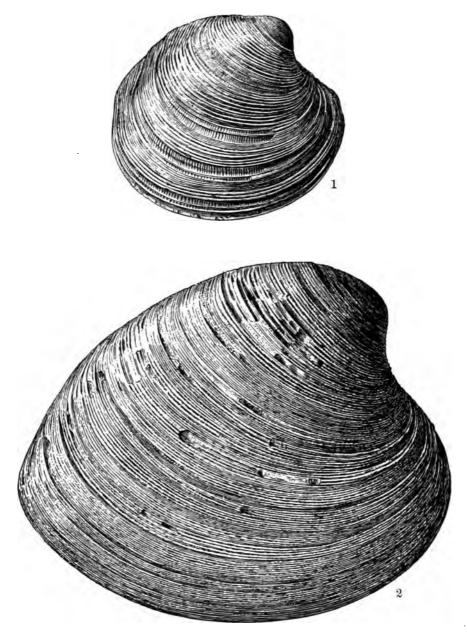


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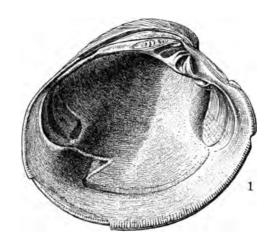
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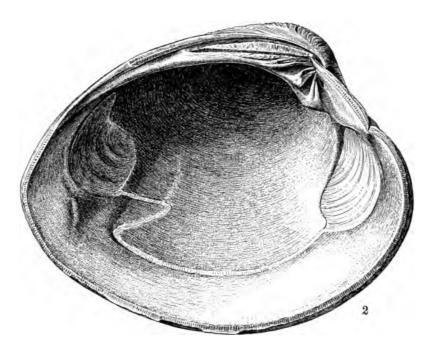


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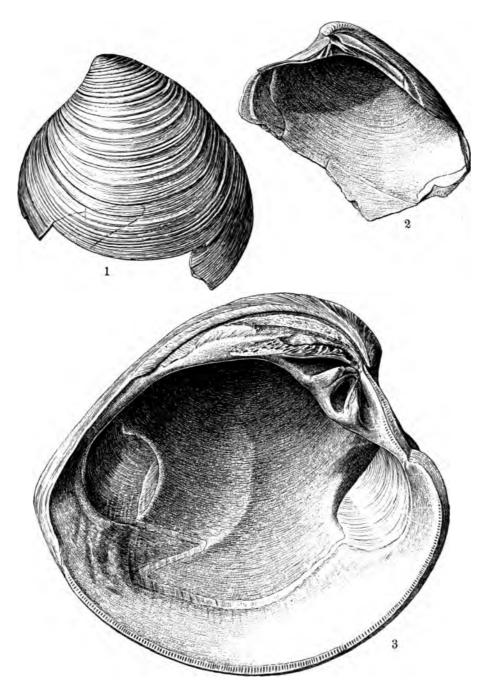




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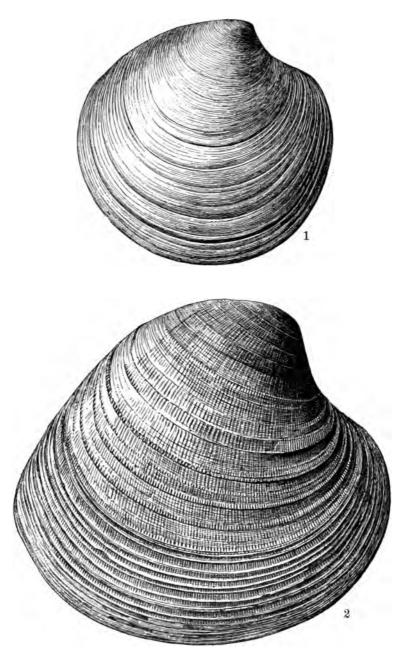
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MOLLUSCA-PELECYPODA.

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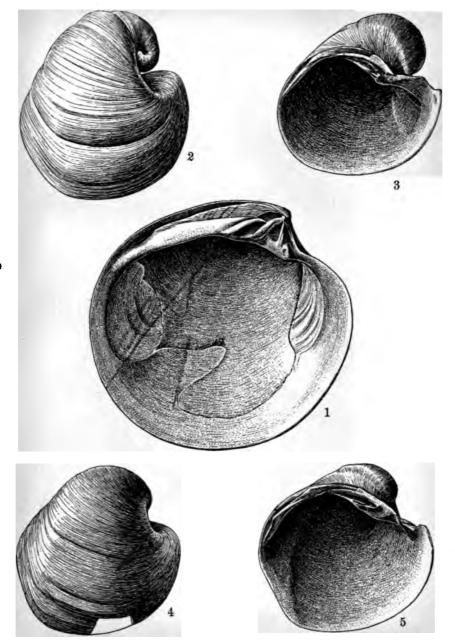
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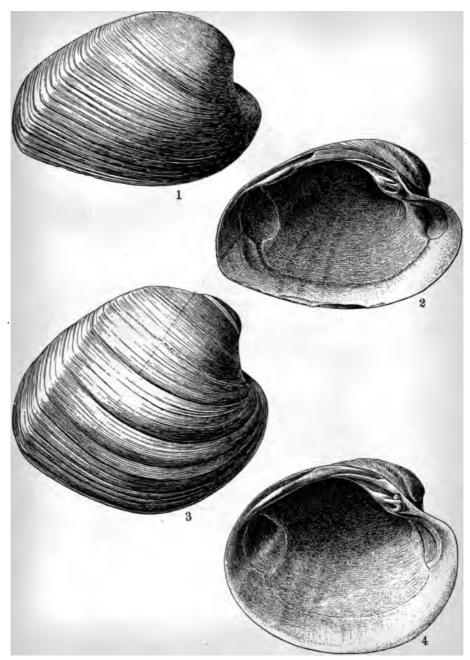
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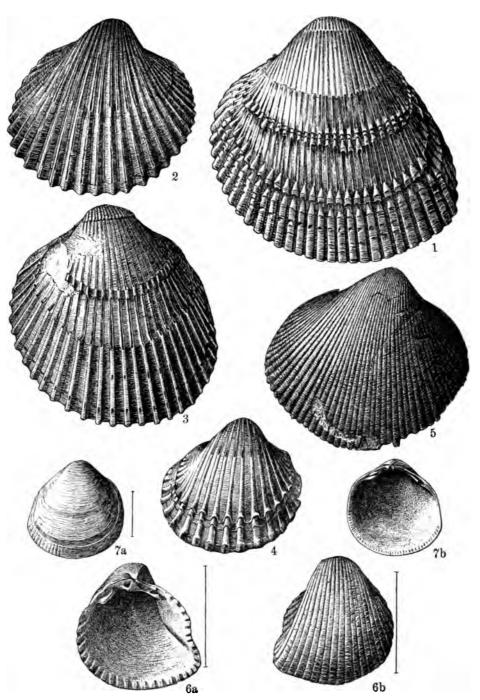
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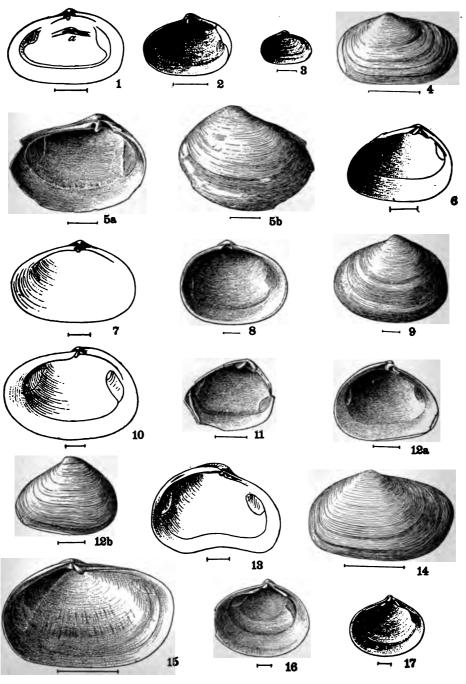
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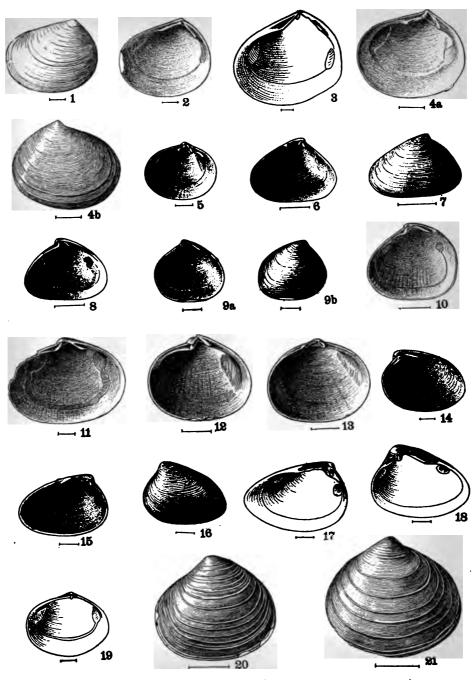
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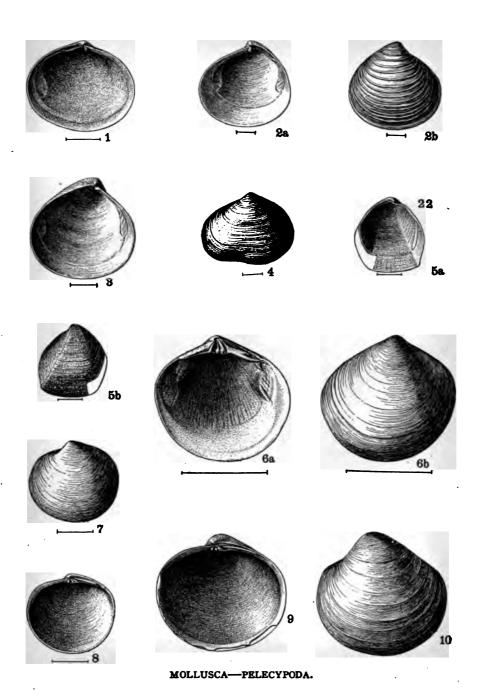
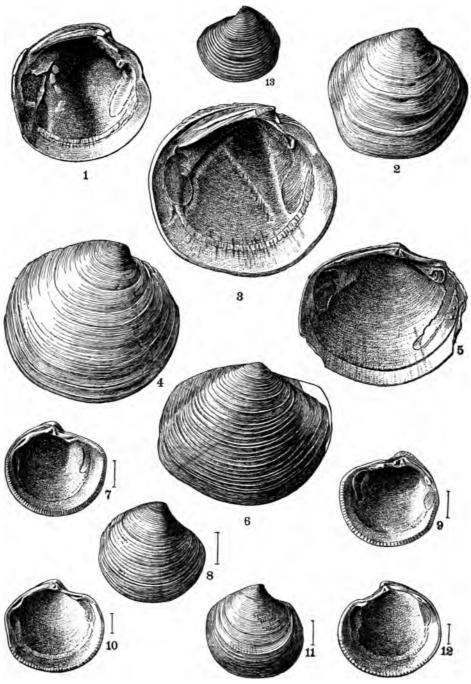


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MOLLUSCA—PELECYPODA.

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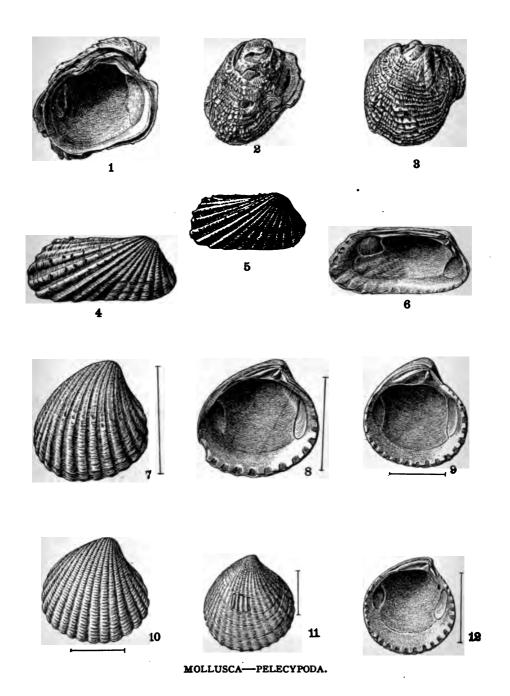
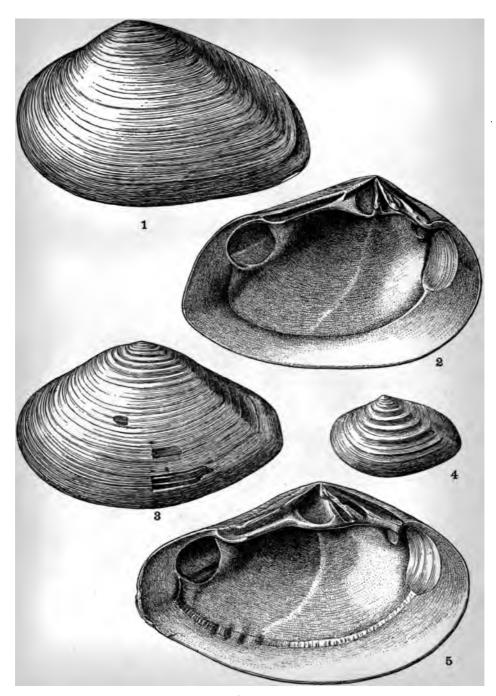


PLATE XCII.

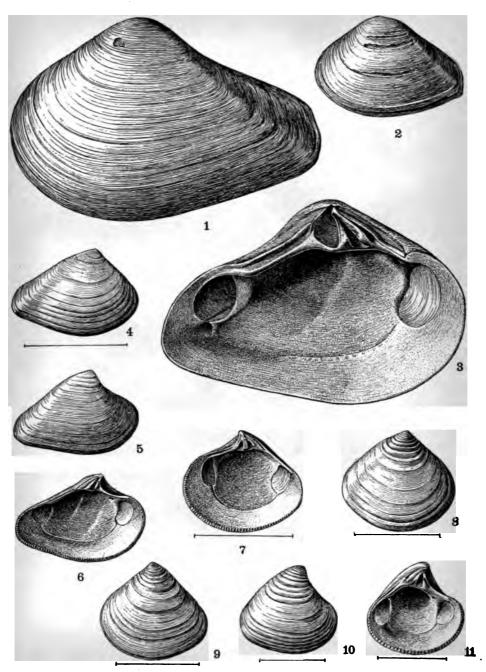
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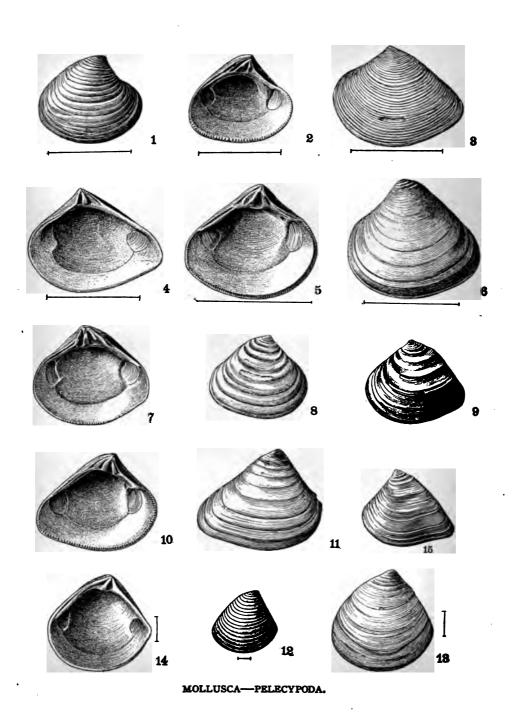
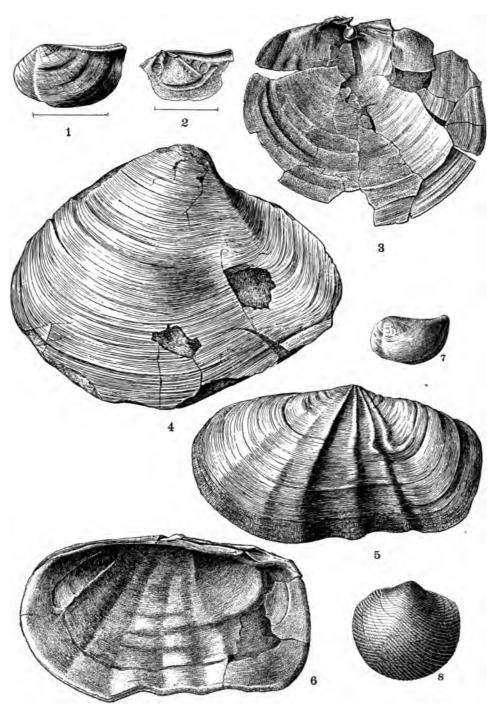


PLATE XCV.

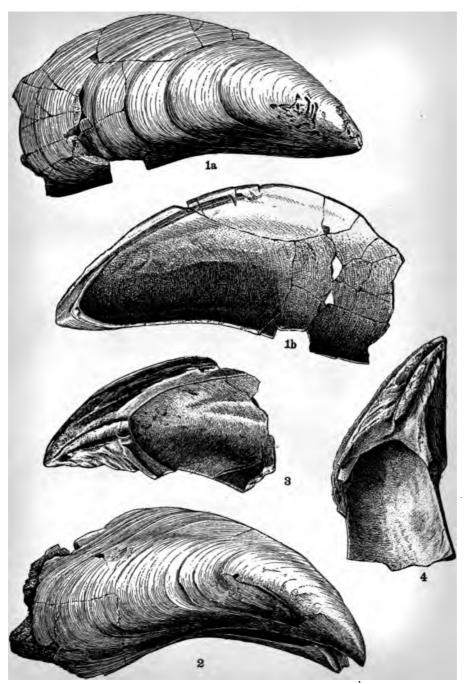
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MOLLUSCA—PELECYPODA.

PLATE XCVI.

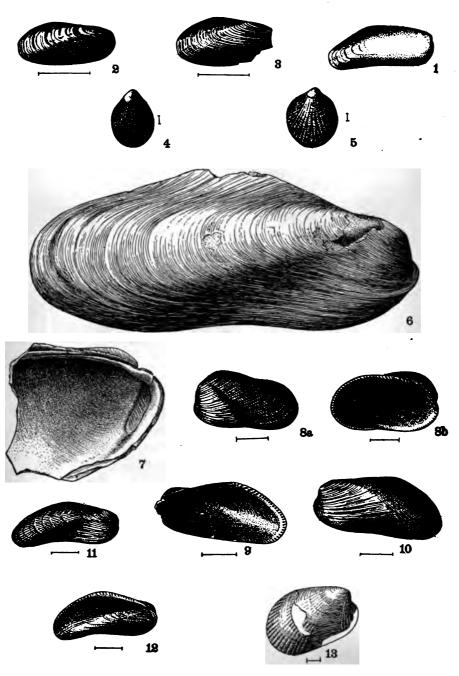
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MOLLUSCA—PELECYPODA.

PLATE XCVII.

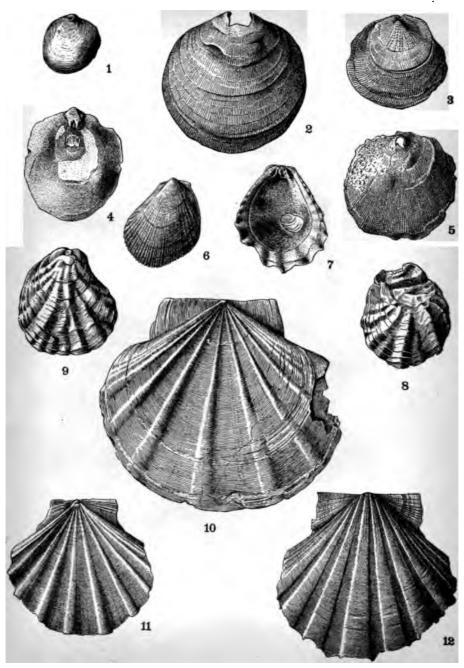
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MOLLUSCA-PELECYPODA.

PLATE XCVIII.

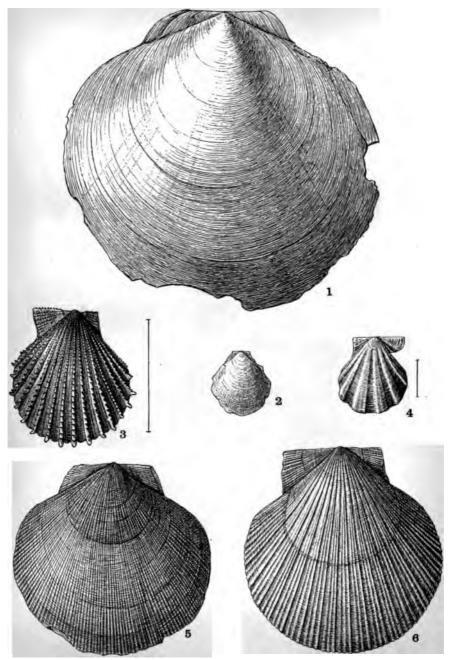
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MOLLUSCA-PELECYPODA.

PLATE XCIX.

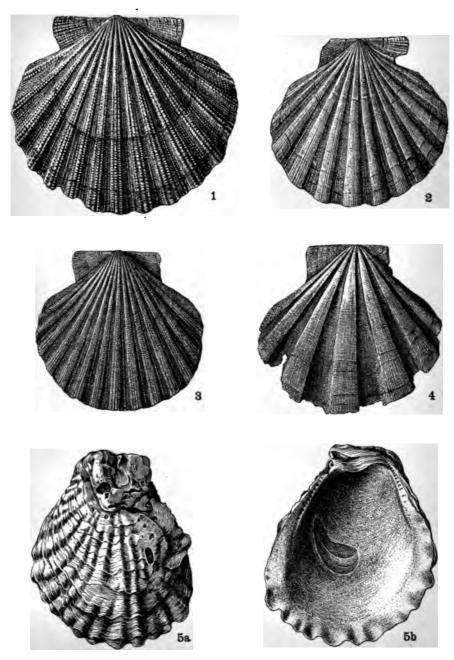
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MOLLUSCA—PELECYPODA.

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MOLLUSCA—PELECYPODA.

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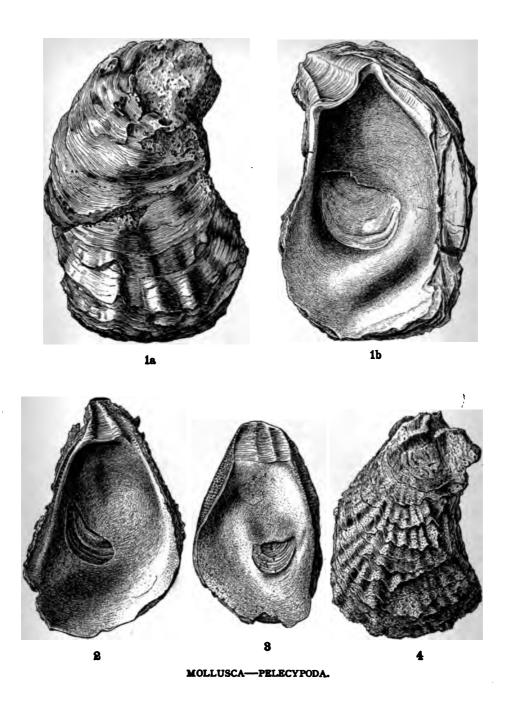
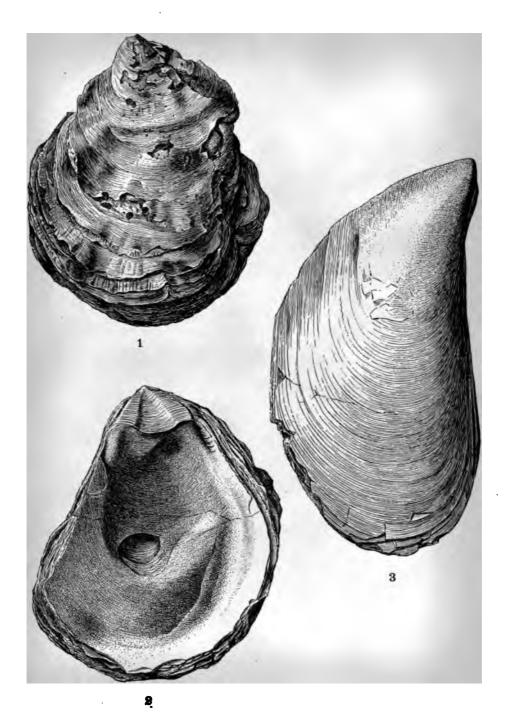


PLATE CII.

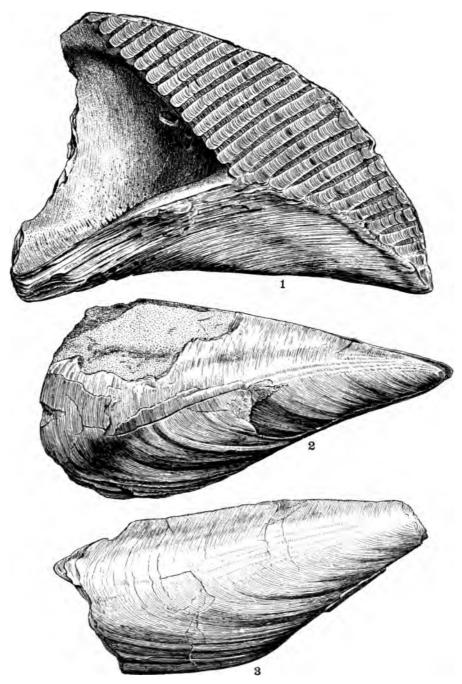
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MOLLUSCA-PELECYPODA.

PLATE CIII.

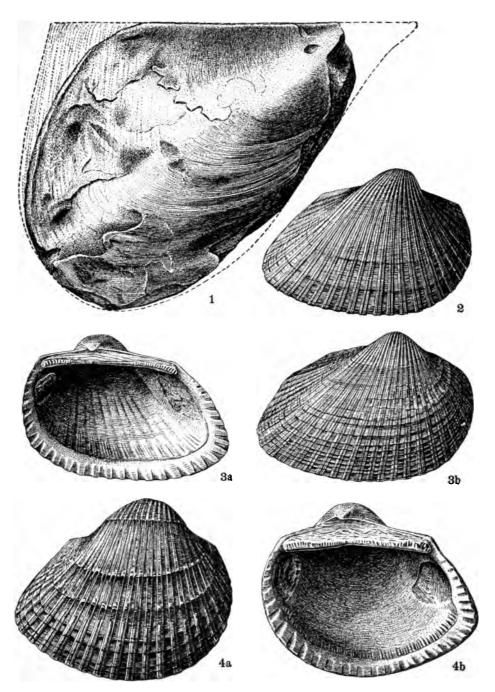
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MOLLUSCA—PELECYPODA.

PLATE CIV.

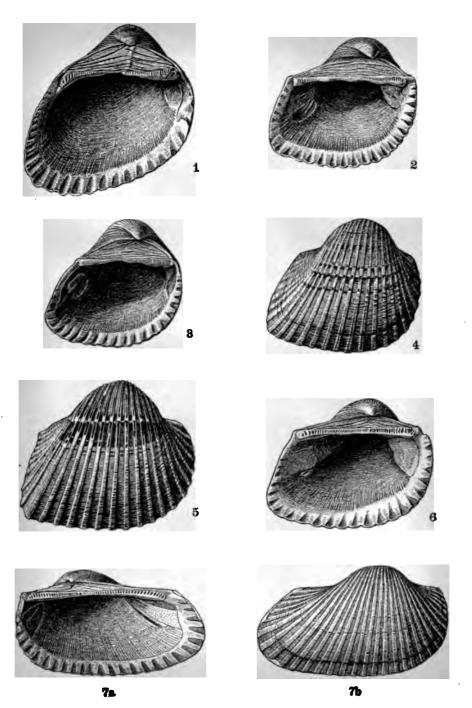
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MOLLUSCA—PELECYPODA.

PLATE CV.

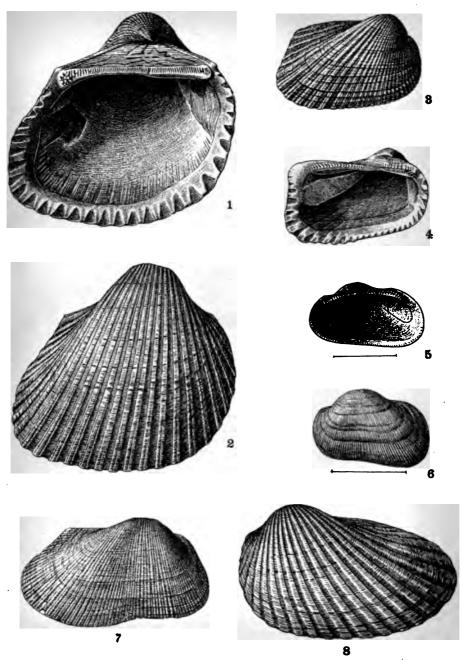
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MOLLUSCA-PELECYPODA.

PLATE CVI.

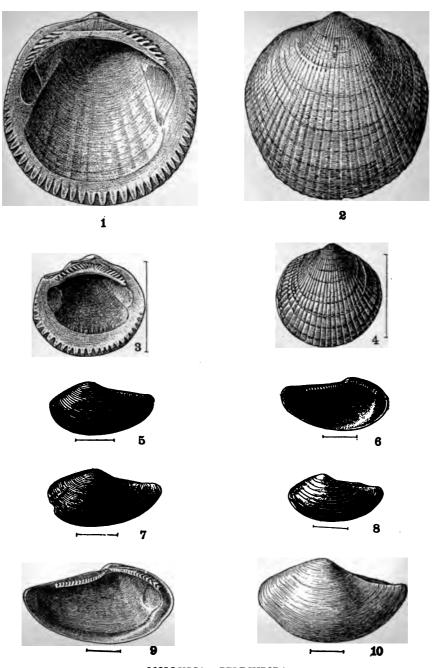
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MOLLUSCA—PELECYPODA.

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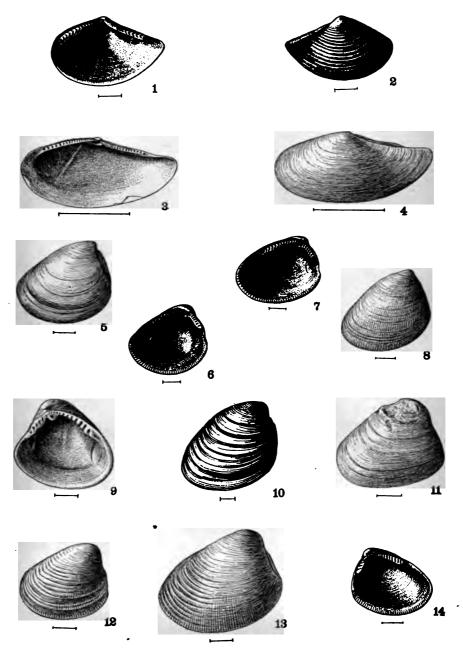
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MOLLUSCA-PELECYPODA.

PLATE CVIII.

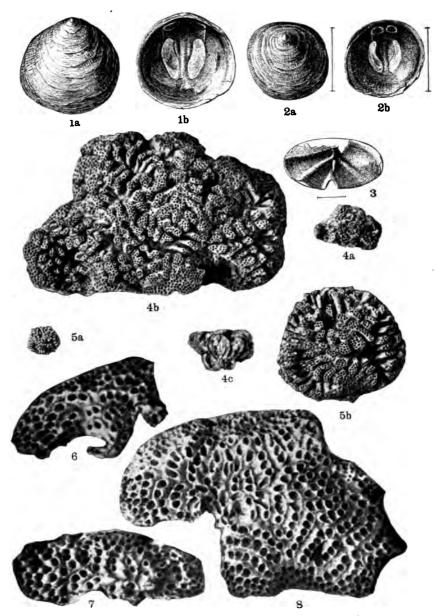
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2. Exterior of right valve. Same locality.	
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<u> </u>	



MOLLUSCA-PELECYPODA.

PLATE CIX.

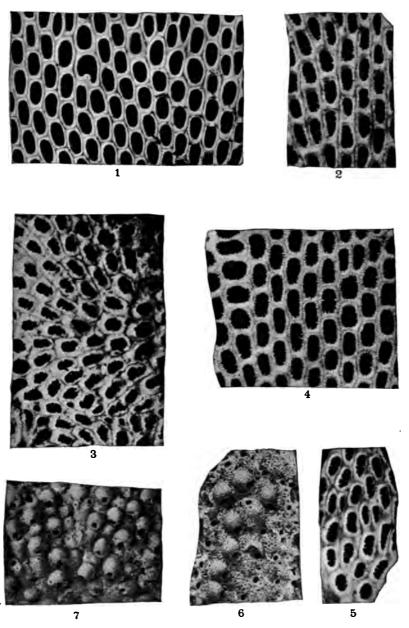
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MOLLUSCOIDEA—BRACHIOPODA AND BRYOZOA.

PLATE CX.

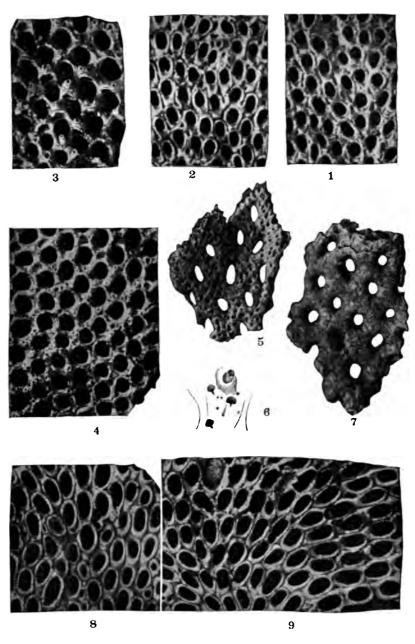
Fig. 1. Membranipora fossulifera n. sp
1. Portion of the surface of a fine specimen. Reed's. $ imes 16$
Figs. 2-5. Membranipora oblongula n. sp
2. Surface of an average specimen. Governor Run. \times 20
3. Surface of another specimen having thicker walls than usual. Same locality. $ imes 16$
4. Portion of the surface of a specimen having relatively larger apertures and thinner walls than in the more typical form of the species. Plum Point. $\times 16$
5. Portion of the surface of another specimen showing irregularity
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6. Portion of a zoarium of this species growing on Pecten madisonius. The ovicells are more abundant on specimen than usual. Cove Point. \times 16
Fig. 7. MICROPORELLA INFLATA n. sp
7. Portion of the surface of a specimen growing on a small mollusk. Jones Wharf. \times 16



MOLLUSCOIDEA—BRYOZOA.

PLATE CXI.

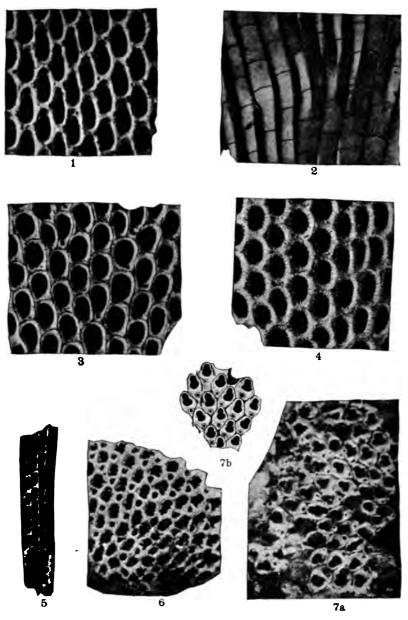
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2. Another portion of the same. \times 16	
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7. Portion of the reverse side of another fragment from the same	
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8. A portion of the surface of a specimen in good condition. \times 16	
9. Another portion of the same. \times 16	
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MOLLUSCOIDEA—BRYOZOA.

PLATE CXII.

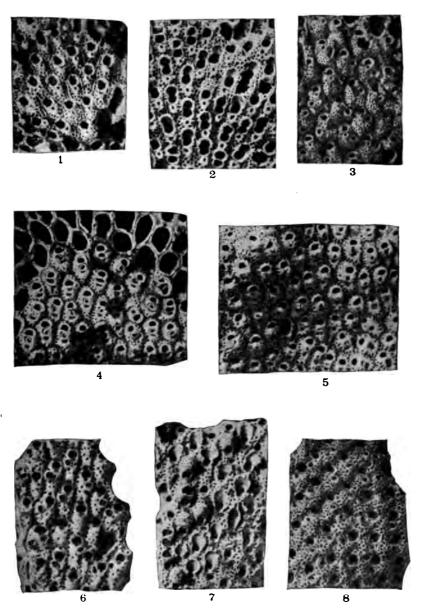
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1. Surface of rather well-preserved fragment. Pawpaw Point. \times 16	
Figs. 2-4. Membranipora bifoliata n. sp	411
2. Dorsal face of one of the two layers of zooecia. Jones Wharf. $\times16$	
3. Surface of young specimen. Same locality. \times 16	
4. Surface of an old specimen. Same locality. $ imes$ 16	
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5. The fragment upon which this species is founded. St. Mary's River. \times 32/5	
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6. Portion of the surface of the specimen described. St. Mary's River. $\times 16$	
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7a. One of several small patches of this species growing on Pecten $madisonius$. Cove Point. \times 16	
7b. A number of the zooecia of same in outline. $ imes 34$	



MOLLUSCOIDEA—BRYOZOA.

PLATE CXIII.

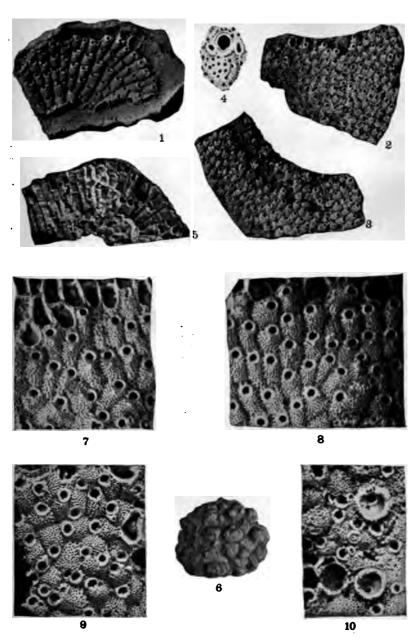
TEATE CAIN.	
•	PAGE
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2. Portion of another zoarium of which nearly all the zooecia are provided with ovicells. On Pecten madisonius. Same locality. \times 16	
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5. Portion of another mass, showing zooecia in an advanced stage of development. Same locality. $\times16$	
Figs. 6-8. Microporella (?) bifoliata n. sp	417
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7. Portion of another fragment having ovicells. Same locality. \times 16 8. Portion of a third piece from Cordova, showing adult appearance. \times 16	3



MOLLUSCOIDEA—BRYOZOA.

PLATE CXIV.

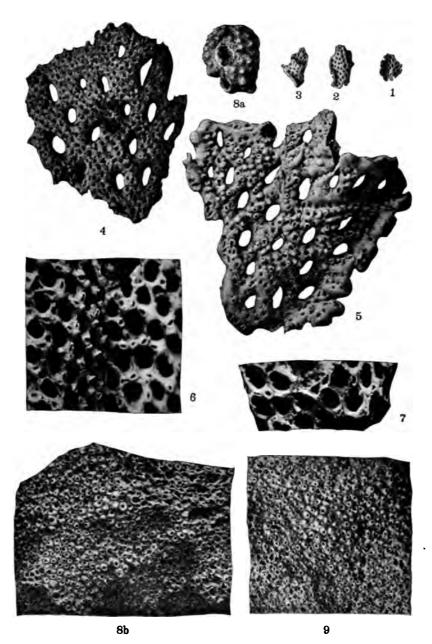
	PAGE
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1. Finely preserved specimen of this species. Governor Run. ×5	
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2. A patch of this species. Jones Wharf. $\times 32/5$	
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Figs 6-10. Schizoporella informata (Lonsdale)	419
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8. Another portion of the same. \times 16	
9. A portion of the surface of a third specimen from Petersburg,	
Virginia, showing less regular arrangement of zooecia and, in	
the latter figure, remains of three of the large globular ovicells. \times 16	
10. Another portion of the same. \times 16	



MOLLUSCOIDEA—BRYOZOA.

CXV

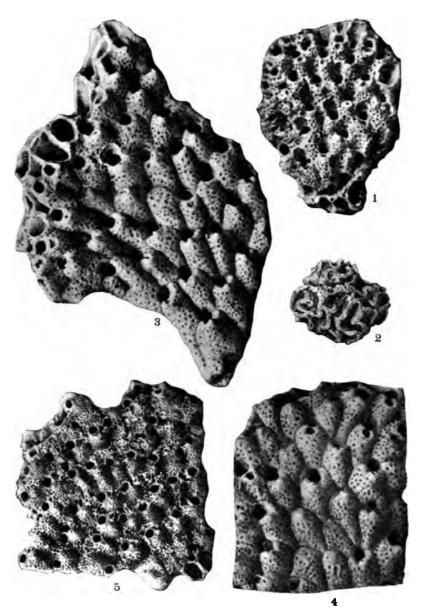
CXV.	
	PAGE
Figs. 1-5. Retepora doverensis n. sp	422
1. View of a small specimen. Dover Bridge. × %	
2. Another specimen. Same locality. × %	
3. A third specimen. Same locality. × %	
4. A fourth fragment without ovicells and with few large avicularia.	
The latter are present chiefly on the worn lower end of the specimen. $\times 32/5$	
5 A fifth piece from the same locality with numerous ovicells and a vicularia. \times 32/5	
Figs. 6, 7. Amphiblestrum constrictum n. sp	413
6. Portion of a patch of this species growing partly on one of the	
radial ribs and partly in a groove between the ribs of valve of	
Pecten madisonius. In the middle of the figure the prominent avicularia are shown in profile. Cove Point. \times 16	
7. A few zooecia showing normal form of same. \times 16	
Figs. 8a, 8b, 9. Lepralia maculata n. sp	423
8a. A specimen growing, as usual, upon a small mollusk and having	
the surface elevations or "maculae" unusually well developed.	
Plum Point. × %	
8b. Portion of surface of same. $\times 32/5$	
9. Portion of surface of a larger mass from the same locality.	
× 32/5	



MOLLUSCOIDEA-BRYOZOA.

PLATE CXVI.

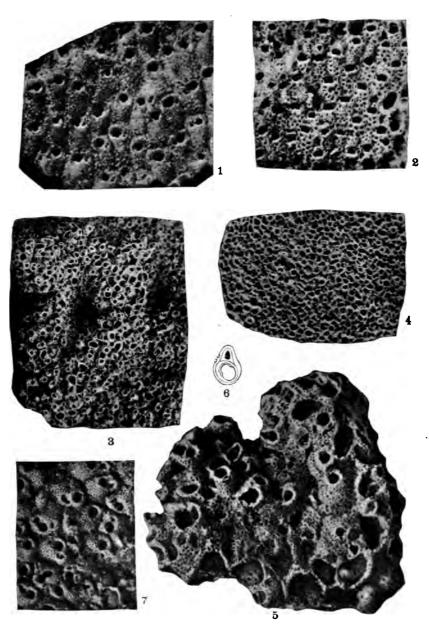
Fig. 1. Palmicellaria punctata n. sp	1 9 28
1. View of the specimen described. Reed's. $ imes$ 16	
Figs. 2-4. Palmicellabia convoluta n. sp 4	127
 View of a specimen illustrating the mode of growth believed to characterize this species. Reed's. × % 	
3. View of a fragment. Same locality. \times 16	
4. Portion of another fragment showing several of the problematical closed cells. Same locality. \times 16	
Fig. 5. Lephalia montifera n. sp	124
5. The specimen upon which this species is founded. The photographic base of the drawing was too dark to admit of bringing the elevation of the front of the zooecia into the relief shown by the original. St. Mary's River. × 16	



MOLLUSCOIDEA—BRYOZOA.

PLATE CXVII.

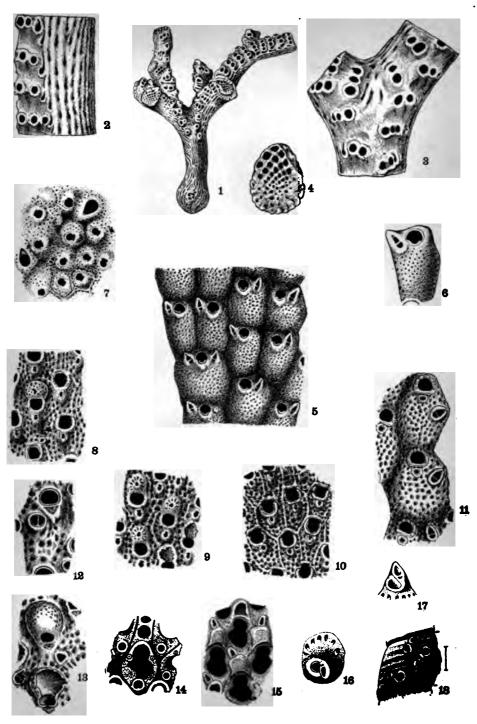
Fig. 1. Schizoporella doverensis n. sp	PAGE 421
Fig. 2. Lephalia Marylandica n. sp	425
Figs. 3, 4. Cellepora massalis n. sp	428
Figs. 5, 6. Cellepora cribrosa n. sp	429
Fig. 7. Schizoporella cumulata n. sp	422



MOLLUSCOIDEA—BRYOZOA.

PLATE CXVIII.

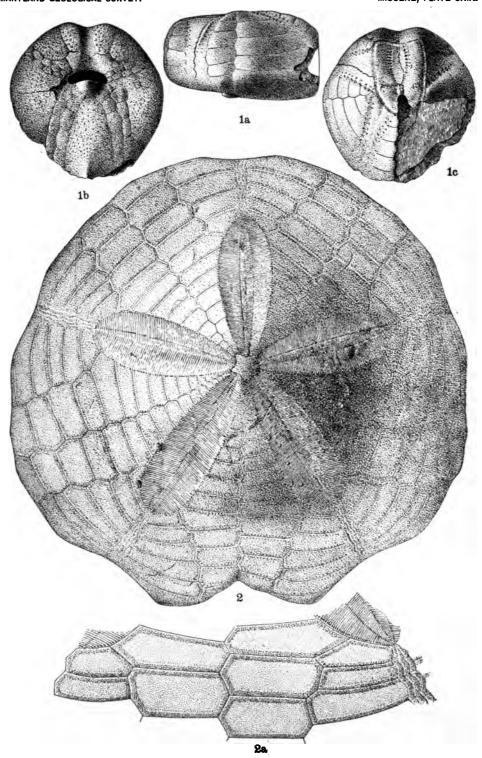
PAGE
Figs. 1-4. Crisina striatopora n. sp
× 21/4
2. Lateral view of one of the branches of the same specimen. \times 23 3. Upper surface of the same. \times 17
4. View of the broken end of one of the branches of the same. \times 17
Figs. 5, 6. Schizoposella subquadrata n. sp
Fig. 7. LEPRALIA MACULATA n. sp
7. A small portion of the surface of one of the specimens figured on Plate CXV. The figure is intended to show the form of the orifice and the two kinds of avicularia. × 17
Figs. 8-10. Lepealia (?) reversa n. sp
8. Several georgia of a specimen having ovicells. × 28½
 Several zooecia of another specimen having ovicells. × 28½ Several zooecia having boundaries unusually well defined. × 28½
Fig. 11. Microporella præciliata n. sp
Figs. 12, 13. Microporella (?) bifoliata n. sp
12. A zooecium and an avicularium. × 28½ 13. Two zooecia with ovicells. × 28½
Fig. 14. Amphiblestrum agellus n. sp
14. View of a single zooecium and portions of several adjoining ones. × 28½
Fig. 15. Amphiblestrum constrictum n. sp
15. Several zooecia with ovicells. × 17
Figs. 16, 17. Cellepora massalis n. sp
16. Front view of a zooecium of the specimen figured on Plate CXVII, Fig. 3. St. Mary's River. × 17
17. Profile view of the same. St. Mary's River. × 17
Fig. 18. Spirorbis calvertensis n. sp
18. View of several individuals attached to the surface of a <i>Turritella</i> . Plum Point. $\times 3/2$



MOLLUSCOIDEA-BRYOZOA, AND VERMES.

PLATE CXIX.

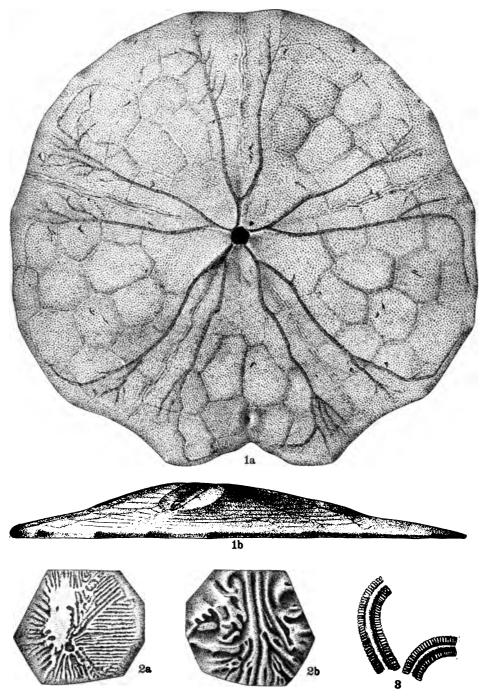
	PAGE
Figs. 1a, 1b, 1c. Echinocardium obthonorum Conrad	430
1a. Lateral surface of test. Jones Wharf.	
1b. Lower surface of same specimen.	
1c. Upper surface of same specimen.	
Figs. 2, 2a. Scutella aberti Conrad	432
2. Upper surface of test. Jones Wharf.	
2a. Enlarged plate of same specimen.	



ECHINODERMATA.

PLATE CXX.

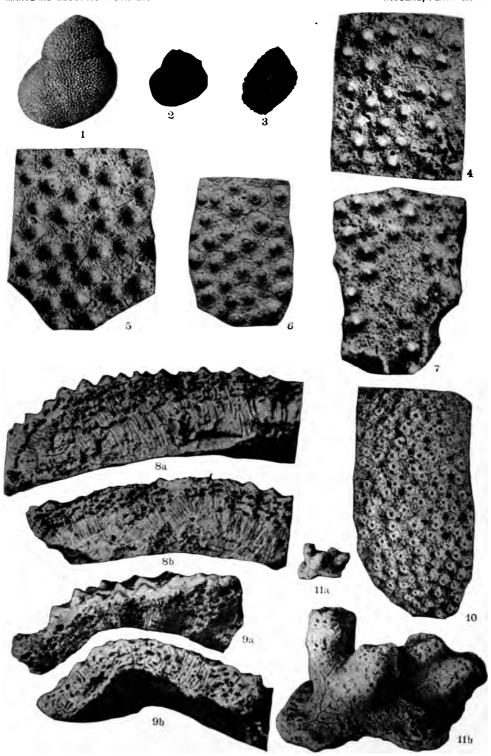
	Page
Figs. 1a-2b. Scutella aberti Conrad	432
1a. Lower surface of test. Jones Wharf.	
1b. Lateral surface of test of same specimen.	
2a. Interambulacral plate.	
2b. Another view of the same (?).	
Fig. 3. Ophioderma (?) sp	433
3. Fragment of arms. St. Mary's River.	



ECHINODERMATA.

PLATE CXXI.

Figs. 1-9. Hydractinia multispinosa n. sp	PAGE
 The type specimen, growing, as usual, upon the shell of Poly- nices sp. and showing the average external appearance. U. S. National Museum. 	
 Two specimens showing extremes observed in number and size of surface spines. The latter possibly represent a distinct species or variety, approaching the European H. circum- vesticus (Wood). 	
4-7. Surface of four specimens showing slight variations partly due to preservation. × 8	
8, 9. Edge views of four pieces of two specimens showing interlaminar spaces and other characters very well. The solid lower portions of the two upper pieces represent the space of the absorbed shell replaced by nearly solid coral tissue. U. S. National Museum. Plum Point. × 8	
Fig. 10. MILLEASTER INCRUSTANS n. gen. et. sp	436
10. Surface of a specimen. U. S. National Museum. Plum Point. \times 8	
Figs. 11a, 11b. Milleaster (?) subramosus n. sp	437
11a. The type specimen. Cove Point.	
11b. Another view of the same. The large openings are of small barnacles partly covered by the hydrozoan. $\times 4$	



COELENTERATA-HYDROZOA.

PLATE CXXII

1.	View	of	several	specimens	attached	to	an	oyster	shell.
	Car	rter's	Landing,	Virginia.	× 1/4				
2.	The c	luste	r of three	individuals	more enla	rged.			
3.	The la	arges	t individu	al represen	ted in Fig.	1 m	ore e	nlarged.	
T	he figu	red s	pecimen	in the collec	ction of Jo	hns l	Hopk	ins Univ	ersity.

¹The following plates illustrating the corals are reproductions from photographs. Mr. Levin C. Handy made the negatives; prints on velox paper were made by Mr. Norman W. Carkhuff of the U. S. Geological Survey. Miss Frances Wieser retouched some of the prints.



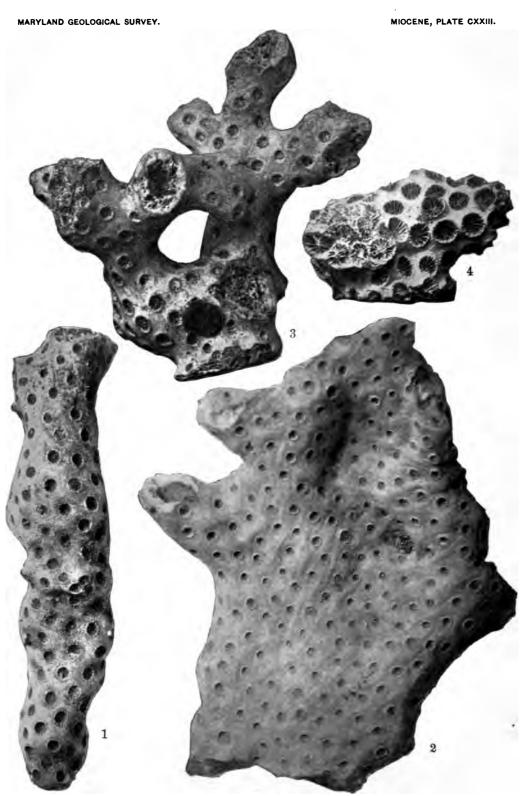




COELENTERATA—ANTHOZOA.

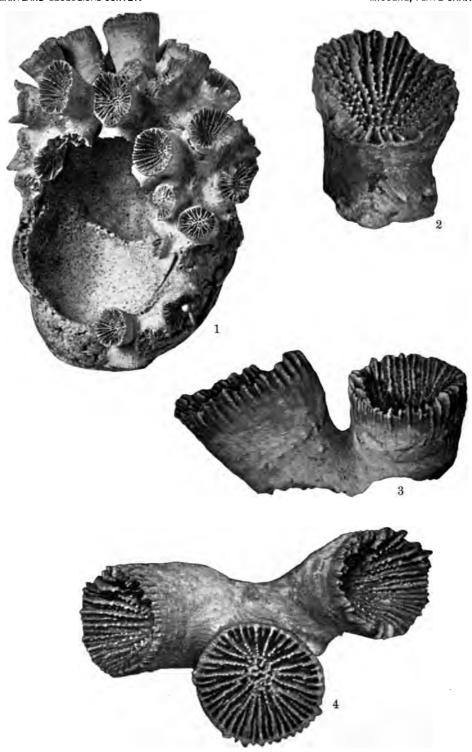
PLATE CXXIII.

Figs. 1-4. Astrhelia palmata (Goldfuss)	AGE
1. The most normal specimen in the collection. The other specimens	
from the same locality show considerable fusion of the branches.	
David Kerr's place, Talbot County, Maryland. Length 114 mm.	
2. Palmate specimen. Choptank River. ¼ to ½ mile below Parker's	
Landing. Length 115 mm.	
 Specimen with coalescing branches. Patuxent Cliffs, St. Mary's County. Greatest length 69 mm. 	
 Young specimen. Plum Point. Greatest horizontal measurement 44 mm. 	
All four appairment in the II C National Museum	



COELENTERATA—ANTHOZOA.

PLATE CXXIV.	
Figs. 1-4. Astrangia lineata (Conrad). (All figures from the same specimen.)	PAGE 441
1. General view of a colony attached to a <i>Crepidula</i> shell. Distance from top of uppermost corallite to lowest portion of shell as placed in Fig. 52 mm. × about 1%	
2. View of interior of a calice to show septal dentations. \times about 5 3. Enlarged view of costae. \times 5	
4. Calicular view. \times 5 Figured specimen in collection of Johns Hopkins University.	

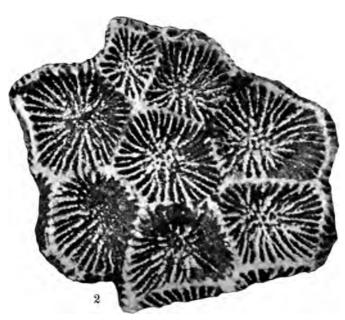


COELENTERATA—ANTHOZOA.

PLATE CXXV.

1	PAGE
Figs. 1, 2. Astrangia (cœnangia) Conradi n. sp	442
1. General view of a specimen. Length 103 mm. × about 11/4	
2. Several calices. × about 5	
Figured specimen in collection of Wagner Free Institute of Science.	



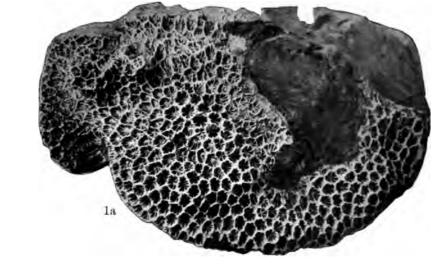


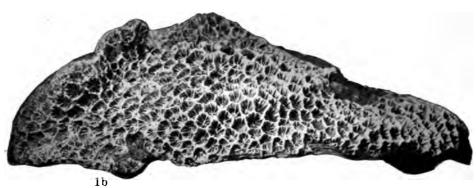
COELENTERATA—ANTHOZOA.

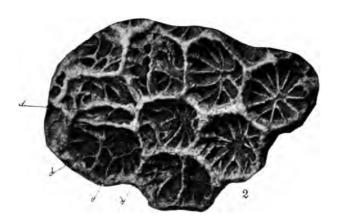
PLATE CXXVI.

PAGE

Figs	s. 1 -2 .	SEPTASTREA MARYLANDICA (Conrad) encrusting young, described by Conrad as Astrea marylandica 44
	1a, 1b.	Two views of the same specimen. Greatest length of the Pecten shell 112 mm. Note the protuberance that has been formed.
	2.	Calices of another specimen. The "d"'s indicate dissepiments, and show how new zoids are formed by dissepimental budding. The calice at the bottom of the figure has apparently divided by fission. The greatest distance across the figured portion is 16 mm. × about 5
	Figure	d specimens in collection of Johns Honkins University



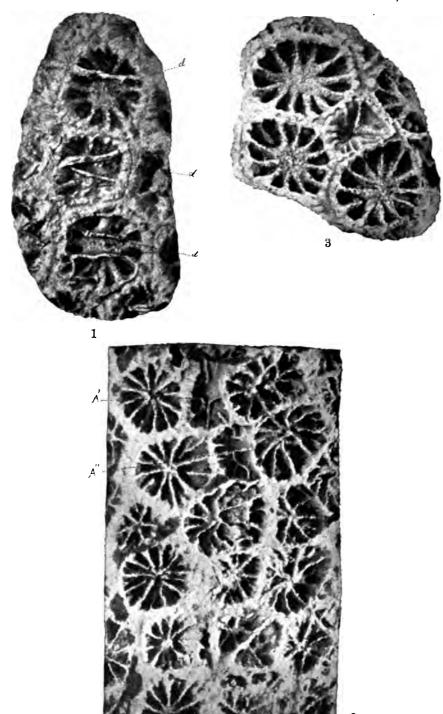




COELENTERATA-ANTHOZOA.

PLATE CXXVII.

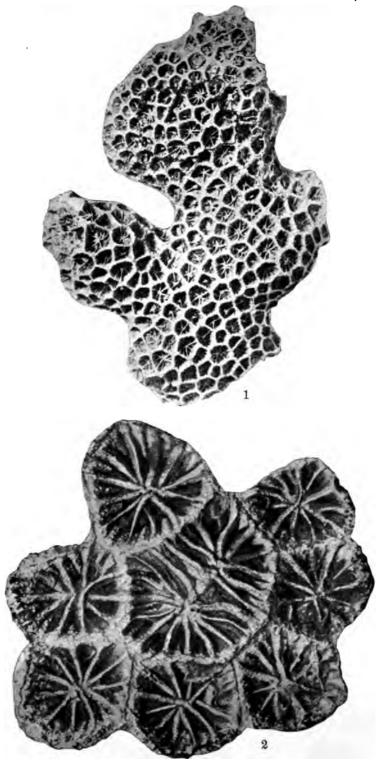
Figs. 1-3. Septastrea marylandica (Conrad)	PAGE 444
 Several calices of a specimen enlarged to show initiation of reproduction by dissepimental budding. Distance across the three calices, 10 mm. × about 7 Calices of another specimen. A', A", young calices, but so far 	
advanced that one can not be sure which are the mother calices. Immediately below A'' is a young calice, apparently being formed by dissepimental budding. $\times 7$	
 Calices of still another specimen, showing budding between the corners of the calices. × about 6½ Figured specimens in collection of Johns Hopkins University. 	



COELENTERATA—ANTHOZOA.

PLATE CXXVIII.

	PAGI
Figs. 1, 2. Septastrea marylandica (Conrad)	444
1. General view of a specimen 67 mm. high.	
2. Calices from specimens represented on Plate CXXIX. The large	
calice shows incipient fission. \times 5½	
Figured specimens in collection of Johns Hopkins University.	



COELENTERATA--ANTHOZOA.

PLATE CXXIX.

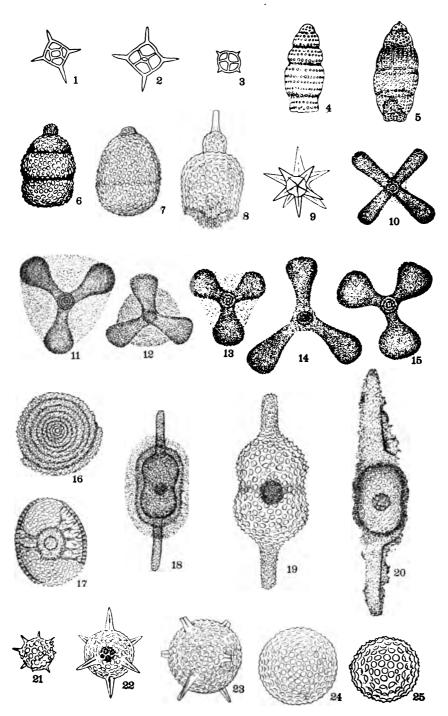
	PAGI
SEPTASTREA MARYLANDICA (Conrad)	444
General view of a specimen 175 mm. long, the figure slightly less than	
natural size.	
Figured specimen in collection of Johns Hopkins University	



COELENTERATA—ANTHOZOA.

PLATE CXXX.

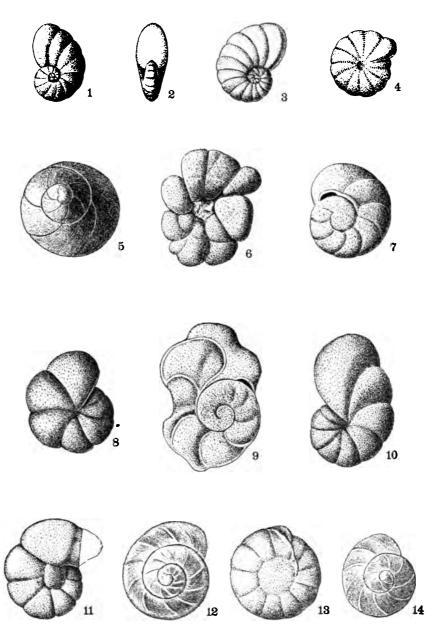
P	PAGE
Figs. 1, 2. DISTEPHANUS CRUX (Ehrenberg)	448
2. Larger pileated piece of skeleton. Same locality. \times 375	
Fig. 3. Dictyocha fibula (?) Ehrenberg	
Fig. 4. Lithocampe marylandica n. sp	4 50
Fig. 5. Eucyrtidium calvertense n. sp	450
Figs. 6, 7. Stichocapsa Macropora Vinassa	451
Fig. 8. Anthocybtium doronicum Haeckel	451
Fig. 9. LITHASTERISCUS BADIATUS Ehrenberg	453
Fig. 10. Spongasteriscus marylandicus n. sp	453
Figs. 11-13. DICTYOCORYNE PROFUNDA Ehrenberg	454
Fig. 14. Rhopalodictyum marylandicum n. sp	455
Fig. 15. Rhopalodictyum calvertense n. sp	455
Fig. 16. Porodiscus concentricus (Ehrenberg)	455
Fig. 17. Phacodiscus calvertanus n. sp	456
Fig. 18. Cannartidum sp	456
Fig. 19. Cannartiscus amphicylindricus Haeckel	457
Fig. 20. Cannartiscus marylandicus n. sp	457
Fig. 21. Acanthosphæra parvula Vinassa	458
22. A specimen from Plum Point. × 131	458
23. A specimen from Lyons Creek. × 150	459
Figs. 24, 25. Cenosphæra porosissima Vinassa	459



PROTOZOA—RADIOLARIA.

PLATE CXXXI.

Figs. 1-3. Nonionina scapha (Fichtel and Moll)	460
Fig. 4. Polystomella striatopunctata (Fichtel and Moll) Jones Wharf. \times 47	462
Fig. 5. Descobbina orbicularis (Terquem)	463
Fig. 6. Planorbulina mediterranensis d'Orbigny Chesapeake Beach. \times 33	463
Figs. 7, 8. Truncatulina lobatula (Walker and Jacob)	464
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Fig. 11. Anomalina geossebugosa (Gümbel)	466
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PROTOZOA-FORAMINIFERA.

PLATE CXXXII.

,	PAGE
Figs. 1, 2, GLOBIGERINA BULLOTDES d'Orbigny	
2. Another specimen. Same locality. \times 42	
Fig. 3. Globigerina cretacea d'Orbigny	469
Fig. 4. Textularia abbreviata d'Orbigny Governor Run. \times 46	470
Fig. 5. Textularia agglutinans d'Orbigny Governor Run. \times 43½	470
Figs. 6, 7. Textularia articulata d'Orbigny	471
Figs. 8, 9. Textularia gramen d'Orbigny	471
Fig. 10. Textularia carinata d'Orbigny	472
Figs. 11, 12. Textularia sagittula Defrance	472
Fig. 13. Textularia subangulata d'Orbigny	473
Fig. 14. Bolivina beyrichii var. Alata Seguenza	473
Fig. 15. Cristellaria cultrata (Montfort)	474
Fig. 16. Cristellaria wetherellii (Jones)	475

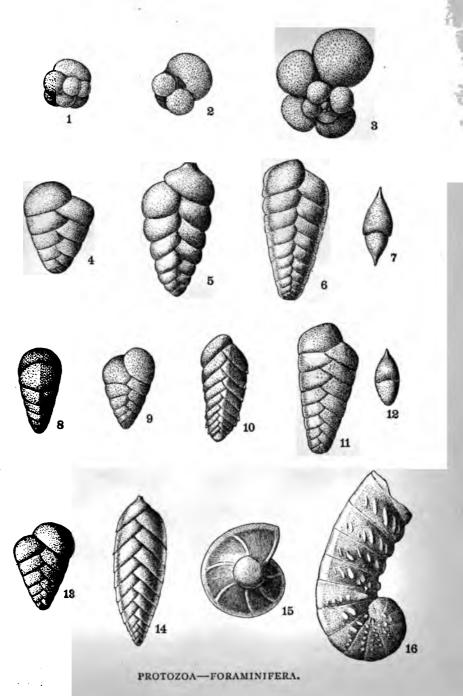


PLATE CXXXIII.

I Dill D Children.	
Fig. 1. Polymorphina compressa d'Orbigny	PAGE 476
Fig. 2. Polymorphina compressa var. striata n. var	476
Fig. 3. Polymorphina elegantissima Parker and Jones Chesapeake Beach. \times 421/3	476
Fig. 4. Polymorphina gibba (d'Orbigny)	477
Figs. 5, 6. POLYMORPHINA LACTEA (Walker and Jacob)	477
Fig. 7. Polymorphina regina Brady, Parker and Jones Chesapeake Beach. \times 391/3	478
Fig. 8. Uvigerina canariensis d'Orbigny	478
Fig. 9. Uvigerina pygmæa d'Orbigny	479
Fig. 10. UVIGERINA TENUISTRIATA Reuss	479
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Fig. 12. Miliolina seminulum (Linné)	481
Fig. 13. Spiroloculina tenuis (Czjzek)	483
Fig. 14. Spiroloculina grata Terquem	482

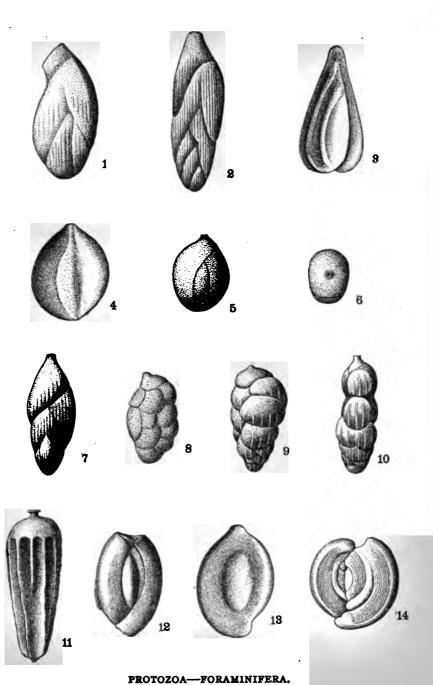
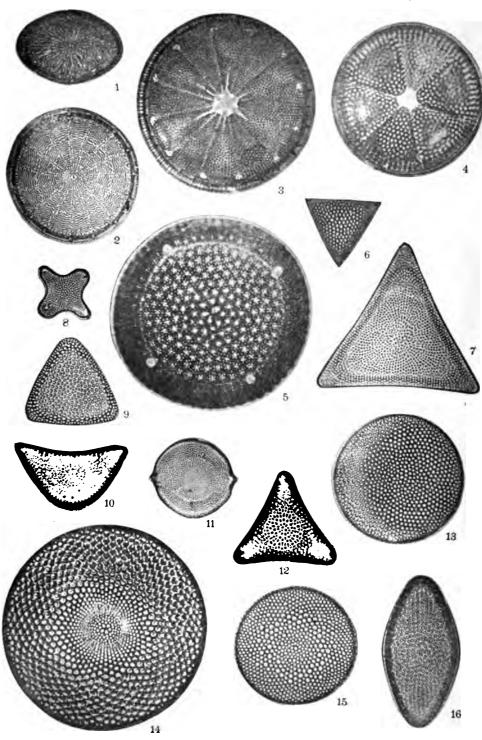


PLATE CXXXIV.

Fig.	1.	ACTINOCYCLUS ELLIPTICUS Grunow. × 3331/3	FAGE 502
Fig.	2.	Actinocylus moniliformis Ralfs. × 3331/3	502
Fig.	3.	Actinoptychus heliopelta Grunow. \times 166%	499
Fig.	4.	Actinoptychus undulatus (Kützing). × 3331/4	499
Fig.	5.	AULACODISCUS ROGERSII (Bailey). × 166%	497
Fig.	6.	BIDDULPHIA ACUTA (Ehrenberg). × 3331/3	492
Fig.	7.	BIDDULPHIA CONDECORA (Ehrenberg). × 3331/3	492
Fig.	8.	BIDDULPHIA DECIPIENS Grunow. \times 333½	493
Fig.	9.	BIDDULPHIA INTERPUNCTATA (Grunow). × 3331/3	494
Fig.	10.	BIDDULPHIA SEMICIRCULARIS (Brightwell). \times 3331/3	494
Fig.	11.	BIDDULPHIA SUBOBBICULARIS Grunow. \times 333 $\frac{1}{2}$	495
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Fig.	13.	Coscinodiscus apiculatus Ehrenberg. × 3331/4	503
Fig.	14.	Coscinodiscus asteroides Truan and Witt. $ imes 333 \frac{1}{2} \dots$	504
Fig.	15.	Coscinodiscus heteroporus Ehrenberg. × 3331/3	505
Fig.	16.	Coscinodiscus lewisianus Greville. × 3331/3	505

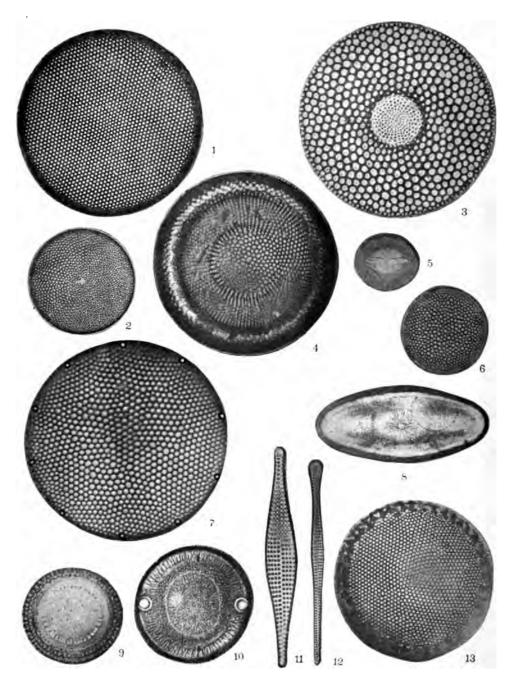




PLANTÆ-THALLOPHYTA, DIATOMACEÆ.

PLATE CXXXV.

Fig.	1.	Coscinodiscus lineatus Ehrenberg. × 3331/3	pagr 506
Fig.	2.	Coscinodiscus perforatus Ehrenberg. × 333½	506
Fig.	3.	Craspedodiscus coscinodiscus Ehrenberg. × 3331/3	500
Fig.	4.	Craspedodiscus elegans Ehrenberg. × 166%	501
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Fig.	8.	GRAYA ARGONAUTA Grove and Brun. × 3331/2	496
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Fig.	10.	PSEUDAULISCUS SPINOSUS (Christian). × 3331/3	497
Fig.	11.	RHAPHONEIS GEMMIFERA Ehrenberg. × 3331/3	488
Fig.	12.	SCEPTRONEIS CADUCEUS Ehrenberg. × 3331/3	489
Fig.	13.	STEPHANOPYXIS CORONA (Ehrenberg). × 3331/3	490



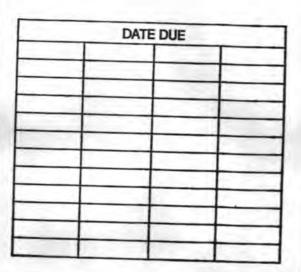
PLANTÆ-THALLOPHYTA, DIATOMACEÆ.



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